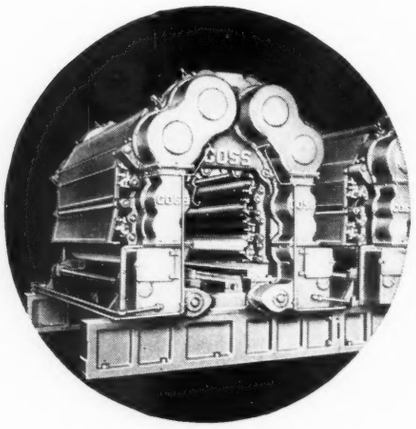
PRINTING EQUIPMENT ENGINEER

MARCH • 1934

A Technical Publication for Mechanical Executives Responsible for Printing Production, Equipment and Supplies

PRECISION

CARRIED TO 1/10,000 OF AN INCH



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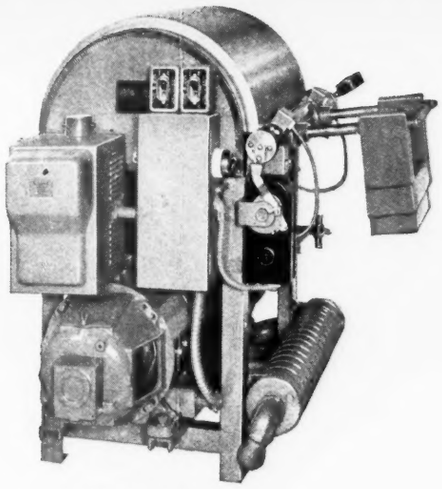

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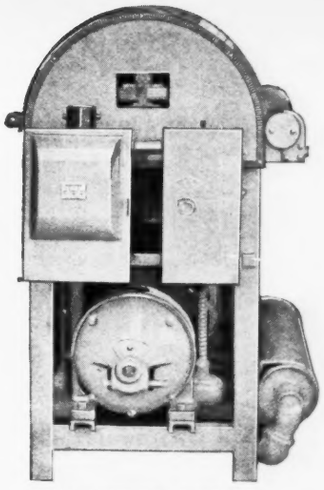
1934



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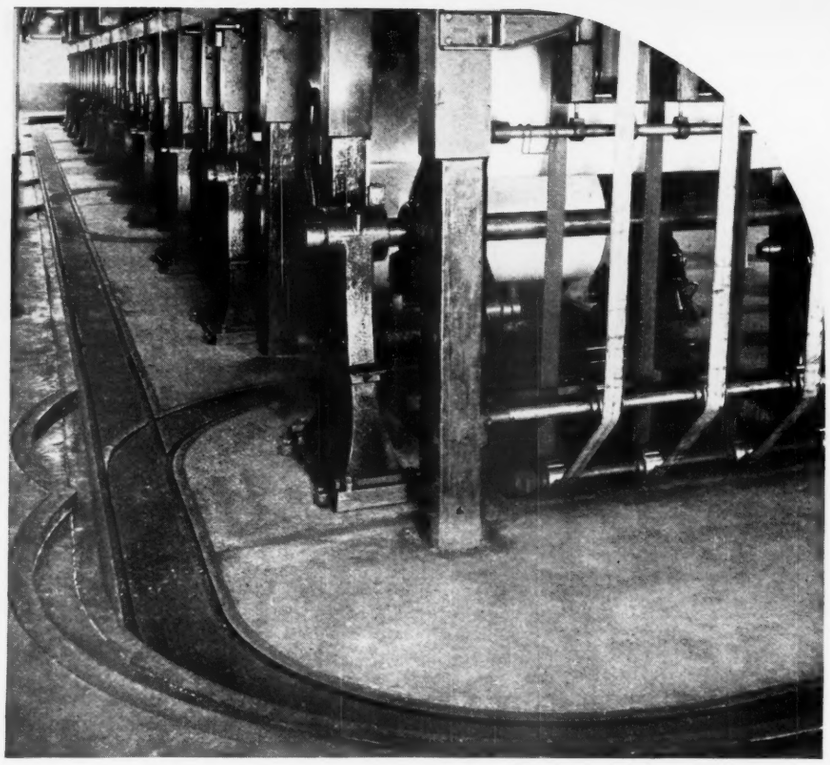

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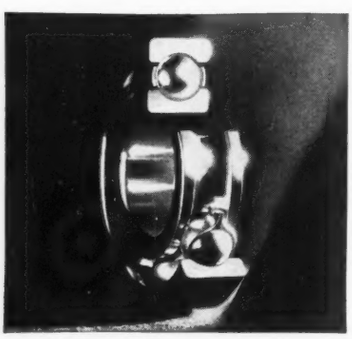
3177

● *You may buy a bearing as a bargain but try and get a bargain out of using it, for nothing is apt to cost so much as a bearing that cost so little*



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THE NEW YORK TIMES has adopted the Wood Autopaster as a standard part of its pressroom equipment, and has ordered for immediate delivery TWENTY ADDITIONAL AUTOPASTERS for use in its New York plant.

Its swift Wood Steel Presses hereafter will be replenished automatically with paper rolls while working at full speed. No longer need they be slowed down during operation.

Thus there will result a great increase of output without a corresponding increase of speed, with a halving of printed-waste, and such uniform excellence of printing and folding as is not possible with presses having to be slowed down for paper replenishment.

When its Autopasters are installed ***The New York Times*** will be the only newspaper in the world produced by this ultra-modern method.

THE WOOD Steel Printing Unit now becomes a ***self-feeding printing press*** able to replenish its own paper rolls automatically at full speed, and will be sold as such. There is none other upon the market. Also, it is the only press which clamps and unclamps its own printing plates automatically and without human effort, thus economizing starting time while providing a more uniform clamping of plates than is possible by hand, eliminating sprung plates, broken webs, and bad printing.

In addition to these inventions the Wood Press embodies many other unique devices. It possesses an unbreakable folder, made wholly of steel — the fastest folding machine in use.

Because of its handiness and celerity, and its productivity, the Wood Press is beyond rivalry where the quick and economical manufacture of many-paged newspapers of large circulation and high quality is concerned.

Wood Newspaper Machinery Corporation

Makers of Fine Newspaper Machinery

501 Fifth Avenue, New York

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For information write to Goodyear, Akron, Ohio, or Los Angeles, California, or call any Goodyear Branch. **Branches in all principal cities**

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Printing Equipment Engineer

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Share Your Knowledge With Others

The key men in your organization will appreciate looking over the pages of this magazine. Perhaps one of them will be able to put some particular technical idea to good use.

Place a check mark in each square for attention of the department head or assistant whom you wish to look over special articles in this issue.

☐ *Production Manager*

☐ *Foreman Lithographing Department*

☐ *Mechanical Superintendent*

☐ *Superintendent Stereotype Foundry*

☐ *Composing Room Superintendent*

☐ *Superintendent Electrotype Department*

☐ *Chief Composing Room Machinist*

☐ *Superintendent Press Room*

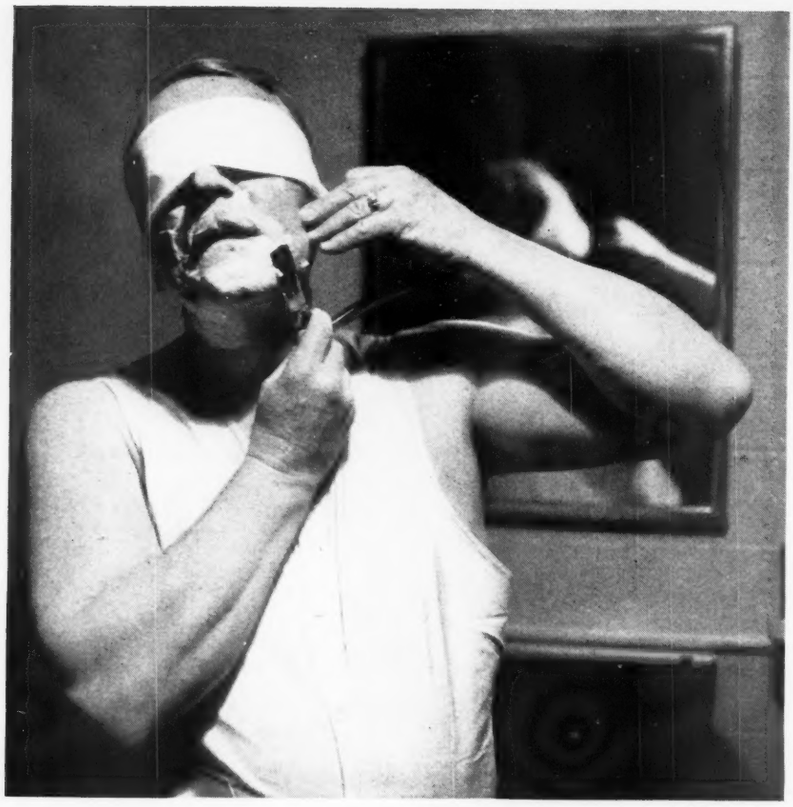
☐ *Monotype Department*

☐ *Bindery Foreman*

☐ *Photo Engraving Department*

☐ *Manager*

☐ *Purchasing Agent*



Of Course, He May Lose Some Skin

Even without the blindfold, man often whacks off a chunk of flesh during his morning shave. But when he cannot see where his razor is going, he is apt to cut more and bigger divots.

These wounds seldom are mortal. Yet, it takes time for them to heal. So, too, with errors in linecasting machine composition. They can be corrected—*but not without loss of time.*

Operators who attempt to verify their assemblies of ordinary brass matrices are as handicapped as blindfolded shavers who try to see where they are directing their razors.

But it no longer is necessary to so handicap operators—nor to waste 12% of their time in error correcting.

By having your matrices treated with our Black and White process—*making reference characters plainly visible in the assembler*—a significant proportion of error expense can be eliminated.

No guess work about this. We *guarantee* a 25% reduction in all errors in original machine composition and *prove this saving* before you pay us a penny.

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PRINTING
EQUIPMENT
ENGINEER

for March 1934

Cause and Prevention of Makeready

By H. W. HACKER*

Mr. Hacker Says Variations in Printing Heights Are Easily Expressed in Thousandths of an Inch, Are Measurable and Are Subject to Inspection and Acceptable Tolerances.

GUTENBERG's first press had a frisket frame upon which to mount the makeready. The latest and finest of our relief printing presses cannot be printed upon without some makeready. And the reason is the same in both cases. The difference is in degree, not in kind. This reason is uneven impression—not necessarily of presses, but of the combination couple—forms and presses.

Thus, makeready was in at the birth of printing and has continued down to the present day. This hallowed tradition is, in fact, one of the chief obstacles to improvement. Makeready is accepted uncritically, an attitude singularly inconsistent in this age of mechanics, precision and organization.

Dimension and mensuration, as clues to the makeready problem, date from certain articles by this writer on the Science of Makeready which appeared in *The Inland Printer* in 1915. This was probably the first comprehensive analysis of the underlying causes of makeready in terms of size or dimension or printing distance.

Prior to that time makeready was practiced as an art and was regarded as a necessary operation in printing good letterpress. Historically it was indeed necessary. In no other way except by press makeready was it possible to compensate for the inaccuracies of forms and presses.

ERRORS OF DIMENSION CAN BE ISOLATED, MEASURED AND CORRECTED

But the discovery about that time of means for measuring the impressional factors opened the door to means of prevention. It became known that errors of dimension, if not the only causes, are at least the principal causes of makeready, and that these errors can be isolated, measured, and corrected in advance. Thus a large part of makeready as commonly practiced throughout the trade could be avoided.

Whatever may be said about the future of letterpress, one thing is certain—its machinery, methods and craftsmanship as they exist are being improved constantly as time passes. One of the ways in which the mechanical executive may contribute toward improvement is to give serious attention to the control of error in printing heights. Mr. Hacker has made what is probably the most complete analysis ever attempted on the nine fundamental causes for letterpress makeready. In this analysis he indicates the tendencies toward error in letterpress printing surfaces and further points out that makeready as commonly practiced is an extra pressroom activity.

IMPROVING LETTERPRESS PROCESS OF PRINTING

*President, Hacker Manufacturing Company, Chicago, Ill. Copyright 1933, under title of "Cause and Prevention of Makeready."

Much has been done along these lines in recent years to alleviate the makeready situation. Certainly there is an increasing appreciation of its importance. But the field is large and there is some confusion over its ramifications, particularly in respect to practical shop measures. It is my purpose, therefore, to review the entire field, to surround it and chart it and establish a sense of direction. My hope is that such a guide map may be useful in planning improvements and working toward definite objectives.

While the principles discussed apply to all forms of letterpress, the subject is developed especially from the point of view of flat-bed cylinder printing.

WHAT IS MAKEREADY?

Makeready is dimension. That is the basic idea. It embraces the whole subject. Every phase of makeready is, in one way or another, an adjustment of impression by alteration of size. Thus, the correct definition: *Makeready is compensation for errors of dimension in forms and presses.*

The *amount* of makeready, differing widely in different plants, is in direct proportion to the *amount* of these mechanical imperfections. The number and degree of these errors reaching the pressroom determines the number of hours which necessarily must be devoted to makeready at the press. More error—more makeready. Less error—less makeready.

THE STANDARD OF MEASUREMENT

Just exactly what do these size errors mean? They mean something too high or too low in the vertical dimensions affecting impression in type, plates, bases, cylinders, etc. They mean the solids of plates too low and the high lights of plates too high. They mean something too thick or too thin in the lateral dimensions affecting justification, lineup, register, workups—time often charged to makeready and equally important as causes of delay.

How much too high or too low? Tissue is the smallest patch of adjustment in making ready. Tissue measures 0.001 in. Thus 0.001 in. is the basic unit of measurement in this field. It is necessary to think and to talk and to work in terms of *thousandths of an inch.*

Now there is nothing difficult about thinking and talking and working in terms of a thousandth of an inch. It is just as easy as to use "points," "hairline," or "leads," and it is a lot more efficient. Thousandths is understandable, in many forms visible, and easily measureable by tools made for the purpose and available to all.

Every single one of these units which are too high or too low or out of square can be measured. If they can be measured they can be controlled. And that is the heart of the whole matter. Control costs less than press makeready.

PRINTING MACHINERY SUSCEPTIBLE TO CLOSE TOLERANCES

All the machine industries are built on close dimensions. It is such an elementary requirement no one ever thinks of talking about it. It would be like discussing the alphabet. The commonest machine of all, the automobile, has many parts held to a tenth of a thousandth of an inch. Otherwise, they would not stand up, they could not be assembled quickly, they would cost so much that few could buy. Precision standards always reduce costs.

Printing machinery in general is as well made as other machinery but printing forms are terrible. In respect to forms the printing industry still adheres to ideas and methods of the handicrafts of fifty years ago.

This tradition is an obstacle but it is also an opportunity. Large profits await those letterpress printers who will grapple with this parasite, makeready, and, by the use of modern precision methods bring it under control.

Bearing in mind this conception of size, and its importance, let us enumerate the items:

SYNOPSIS OF THE FACTORS OF MAKEREADY

1. *Errors in Type Composition.*—New foundry type generally is the most accurate of all the factors, but in old case type the letters most frequently used are often worn low.

Machine-set type will have high or low letters according to the condition of the matrices. Errors of 0.002 in. above or below are more or less frequent, and worse are not uncommon.

Machine-set type-slugs will average from 0.002 in. over to 0.002 in. under type high and some of it goes to 0.005 in.

Errors of 0.001 in. are relatively unimportant but errors of 0.002 in. to 0.005 in. are certain to need makeready on good work. In addition to this, these errors cause trouble in plating.

Line-casting machine slugs are often thicker toward the top than at the bottom and frequently show a burr along the shoulder. These conditions put them off their feet in lockup. "Bottled" slugs cause lockup, work-up, makeready and plating troubles.

2. *Errors in Rule.*—The fine sizes of rule, both brass and machine cast, are wrong when right, that is, at type-high they punch. High rule causes trouble in both makeready and plating.

3. *Errors in Electrotype Plates.*—The thickness commonly varies from the standard, from plate to plate, and often within each plate, being inaccurately shaved. The surface levelness is frequently marred by sinks and hard edges. All of these conditions cause a vast amount of press makeready.

4. *Errors in Blocked Plates.*—Cuts are rarely type-high. They range from 0.010 in. over to 0.020 in. under 0.918 in. They vary from side to side or corner to corner. The large ones warp. Unlocking, underlaying, overlaying—all are necessary before inaccurate cuts can be printed.

5. *Errors in Make-Up.*—Original type page forms are never exactly square nor exactly the same size. They are never justified under the same pressure, nor are they accurate enough to lift. Neither are they in alignment or register. Hence, stonework; hence, press shifts and work-ups.

6. *Errors in Patent Bases.*—There are considerable departures from standard height on old bases, from several thousandths over to several thousandths under 0.759 in. New bases are generally good. Uneven bases cause makeready for the same error on every job.

7. *Errors in Presses.*—Impressional defects exist to slight degree on most cylinder presses, especially old ones. Holes in cylinders from accident are common. Beds are a little uneven. Uneven presses cause makeready for the same error on every job.

8. *Errors of Compression of Packing.*—Plates perfectly true and level will print weak solids and muddy highlights with the standard packing used on cylinder presses. Makeready to support the solids and relieve the highlights and edges, underlay and (or) overlay, is necessary.

The rough and cheaper grades of paper require more squeeze, hence, more contrasty makeready than smooth enamels. The enamels are sensitive and require more delicate makeready.

9. *Errors of Bear-Off.*—The number, location, and character of plates in a form react upon each other to some extent owing to yield of parts. Some makeready is necessary to balance these strains and equalize the squeeze on all the plates.

Now we have listed *all* the causes of makready. They are only nine in number. There are no more. These are easy to remember, and it is well to do so. Then when you face some particular makeready problem in your plant the thing is already charted in your mind. To repeat, they are: (1) type, (2) rule, (3) plates, (4) blocks, (5) make-up, (6) bases, (7) presses, (8) packing compression, (9) bear-off.

THREE GROUPS OF MAKEREADY

Notice that these errors divide naturally into three groups:

Group A.—The first seven items comprise material that is too large or too small or uneven and which can be measured and corrected either at the source or at some station ahead of the pressroom. This group of errors can be handled completely by an inspection routine which may be called Makeready Control.

Group B.—Plates with heavy areas or shadow dots too low and light areas or highlight dots too high, calling for relief or support as to squeeze on account of packing compression. This group of errors is managed *in part* by certain advance plate treatment properly called Pre-makeready, and *in part* by press makeready.

Group C.—Plates which "bear-off" upon each other to alter the impression. This group of errors can only be handled by spot sheet at the press.

There is legitimate makeready which can only be done at the press.

Continued on page 35

Equipment Makers Express Opinions

Urge Both Cooperation and Subjugation of Self-Interest in Workings of Codes Affecting the Printing Industry

By STAFF WRITER

THE Printing Equipment Code which became effective February 18 was formulated through a spirit of cooperation among the sponsors of the Code and committees of the various printers' organizations. In fact, numerous printers' organizations in the Graphic Arts Industry passed resolutions of approval of the principles embodied in the Code. This was revealed by Arthur Bentley, president of the National Printing Equipment Association, Inc., who made the following statement:

The sponsors of the code for the Printing Equipment Industry and Trade have, from its earliest inception to its final development, worked as a unit, and through some hundreds of changes from the original draft to the final document no decision was ever made by the Code Committee which was not unanimous. Throughout they kept in close touch with the Directors of the Association, always having in mind that they must adhere to the principles involved in the mandate given to them by the Association's membership.

They also cooperated closely with the Graphic Arts Trade through contact with committees of the various printers' organizations, because they felt that if the Code as finally developed was to benefit their own industry it must benefit and meet the approval of their customers. The resolutions of approval of the principles embodied in the Code passed by numerous printers' organizations testify to the excellent support which the Code received from the Graphic Arts Industry.

The splendid cooperation between the members of the Printing Equipment Industry themselves on the one hand, and between them and the users of that equipment on the other is to my mind the most encouraging evidence that the Code should prove an effective instrument in the stabilization, betterment and development of both industries. Certainly if the same spirit of cooperation between all parties can be carried into and through the operation of the Code there can be no question of the accomplishment of a successful result.

GENERAL JOHNSON APPROVES PLAN

One of the distinguishing features incorporated in the Printing Equipment Code is the plan for dealing with the used and obsolete machinery problem which for some time has had a depressing effect not only upon the printing industry but upon the capital goods industry as well. General Johnson, recovery administrator, in his report on the Code to President, said:

Under this schedule manufacturers may set up a clearing association which will issue negotiable certificates of value for this machinery and will also market serviceable used machinery to prevent demoralization of the market for new machinery.

SINCERITY NECESSARY TO MAKE CODES FUNCTION

Joseph T. Mackey, executive vice president of the Mergenthaler Linotype Co. and treasurer of the National Printing Equipment Association, Inc., states that the plan for dealing with the surplus and used machinery problem has been called unique and is promisingly adaptable to other lines of manufacture inasmuch as through the successful working of the plan fresh opportunity will be given to humans to obtain employment and through it will give occupation, earning power, contentment and happiness. He points out that the successful working of the Codes (not alone the Printing Equipment Code, but the Graphic Arts and the Newspaper Codes as well) requires the subjugation of selfish interest and a sincere effort in order to make them function.

Mr. Mackey, in commenting on the outlook for operation under the Codes, said:

During the many hearings at Washington and the meetings of the various branches of the industry, it has been apparent that NRA's first benefit has been in the enforced mutual understanding of the problems which confront all the graphic arts industries. Years of previous agitation, debate at conventions, and criticism in trade publications failed to accomplish what the past six months have brought forth under the necessity of NRA action.

Even though the Codes for Printing Equipment, Graphic Arts, and the newspapers have yet to demonstrate their practical operating possibilities, I believe that the process of negotiation has been of immeasurable usefulness in approaching the ultimate successful solution of the major problems of these industries.

Despite frequent conflict of interests, regional or individual, the prolonged discussion and debate have resulted in the

EACH ONE DEPENDENT ON THE OTHER

PRINTING EQUIPMENT ENGINEER *feels that the future welfare of the mechanical executive with respect to his industry is contingent upon his employer being able to do business* at cost plus. *In giving consideration to the elements which will enable him to do business at cost plus, the printer must give due regard to the disposition of depreciated and obsolete machinery. In order to be able to buy modern cost-cutting machinery which will do* better *work in less time, the printer is morally obligated to deal with the manufacturer on a broad basis so that the manufacturer in turn may give employment and through research may continue improvement of the tools with which the printer and his employees earn their living. Mr. Mechanical Executive, can you see that the prosperity of the printing industry's employers, executives, employees and the manufacturers on whose machinery you do work for your employer are all dependent one on the other? Isn't it fair to assume that you should go along with the newly-born cooperative spirit in the industry of which you are an important part?*

collection of data and industrial policies which was inevitably necessary before any plan to help the graphic arts could have been evolved.

It has been a source of gratification to the Directors of the National Printing Equipment Association that their newly approved Code has been widely praised by authorities in various other fields of business. The Plan for dealing with the surplus used machinery problem has been called unique and promisingly adaptable to other lines of manufacture. It is voluntary in all its aspects. It will succeed and prove helpful to the entire industry only to the extent that it receives the wholehearted, unselfish and voluntary support of the industry. Such a combination will extend beyond mere business relationship, since the destruction and replacement of outmoded and useless machinery would give fresh opportunity for humans to obtain employment and through it, occupation, earning power, contentment and happiness to themselves and those dependent upon them. This is the way out so far as the Capital Goods Industry is concerned. That phase of our general business must mend before any real or general improvement takes place in the other fields of endeavor. The Cost Formula, which is stated with admirable directness and simplicity, has been commended as equally constructive.

In the operation of the Equipment Code, experience alone will tell whether the planning of leaders in the industry will be rewarded by positive benefits. If, as seems to be the case in certain other fields, the forming and approval of a Code lead only to an outburst of schemes to evade its provisions, then we shall feel the unpleasant but effective force of the National Recovery Act.

But apart from any immediate favorable or critical comment on the Codes or the NRA, it seems to me that every branch of the Graphic Arts Industries, and every individual employed therein should realize that we are now definitely engaged in an effort to preserve these businesses. The agitation of many years has been replaced by action.

True it is that no person or company can hope to be wholly satisfied with the newly imposed conditions. Inevitable compromise toward what we hope will be the common good must mean individual sacrifice in many cases.

It is therefore my earnest hope that we may witness a genuine, sincere effort to make these Codes function. If they contain errors in planning, let us dispassionately assemble the facts which will bring about the correction of such errors. Let us realize that no voluntary organization to correct business evils has ever yet succeeded beyond the point where selfish interest brought disruption. NRA has brought us into involuntary organization and we are already the better for knowing our co-workers more closely. If the Codes are strong enough to surmount selfish interest, we are bound to see improvement. Therefore, control by the individual of selfish interest seems to be the first job in hand as the Codes begin to function.

PATIENCE NEEDED BY MEMBERS OF INDUSTRY

James E. Bennet, president, The Babcock Printing Press Mfg. Co., New York, and secretary of the National Printing Equipment Association, Inc., states:

We are all realizing more and more each day that this Code, with all of its provisions, whether we like it or not, is a definite law of the United States, or at least has all the force of a law, and, it is no longer our Code which we can change or interpret to suit ourselves.

A great deal of patience on the part of all members of the industry is going to be needed, but we are assured that if we do exercise patience and work according to the spirit of the Code the results will be an improved industry.

NATIONAL PRINTING EQUIPMENT ASSOCIATION, INC., MEMBERSHIP LIST

Following is a list of the members of The National Printing Equipment Association, Inc., revised to February 25:

A

Acme Multicolor Company
American Type Founders Co.

B

Babcock Printing Press Mfg. Co.
Baum, Russell E.
Berry Machine Company
Boston Wire Stitcher Company
Brackett Stripping Machine Co.
Brandtjen & Kluge, Inc.
Brintnall, H. W., Company

C

California Printers Supply Co.
Challenge Machinery Company
Chambers Brothers Company
Chambon Corporation
Chandler & Price Company
Christensen Machine Company
Claybourn Corporation
Cline Electric Mfg. Company
Cochrane-Bly Company
Cottrell & Sons Company, C. B.
Cross Paper Feeder Company

D

Davidson Perforator Corp.
Dexter Folder Company
Doyle Company, J. E.

G

Gegenheimer, Inc., Wm.
Gorton, Clifford W.
Griffiths Company, Inc., John

H

Hacker Manufacturing Company
Hall Company, Inc., Thos. W.
Hamilton Mfg. Company
Hammond Machine Builders, Inc.
Harris-Seybold-Potter Company
Haywood Company, C. B.
Heidelberg Printing Mach. Corp.

I

Intertype Corporation

K

Kohler Brothers

L

Lanston Monotype Mach. Co.
Levy, Max, & Company
Liberty Folder Company, The
Lindbladh Corporation, The
Ludlow Typograph Company
Ludwig Printers Supply, Inc., Otto

M

Matrix Contrast Corporation
Mergenthaler Linotype Co.
Miehle Printing Press & Mfg. Co.
Miller Printing Machinery Co.
Montgomery & Bacon
Morgans & Wilcox Mfg. Co.
Myers, E. G.
McKittrick, J. L.

N

New Era Manufacturing Co.

O

Ostrander-Seymour Company

P

Printers Mat Paper Supply Co.
Printing Machinery Co., The

R

Rosback Company, F. P.
Rouse & Company, H. B.
Ryan, Joseph A.

S

Schroeter & Brothers, Inc., J. H.
Sheridan Co., T. W. & C. B.
Simcoe Manufacturing Co., Inc.
Smyth Manufacturing Co., The
Southeastern Printers Supply Co.
Southworth Machine Company
Stevens Company, Chas. N.

T

Teletypesetter Corp.
Turner Type Founders Company

U

U.P.M.-Kidder Press Company

V

Vandercook & Sons, Inc.

W

Waldron & Company, John
Wanner Company, The
Warnock Company, W. S.
Webendorfer-Wills Co., Inc.
Wesel Manufacturing Co., F.
Willsea Publishing Co., The
Printing Equipment Engineer (Associate Member)

Z

Zimmer Printers Supply Co.

Now that the Printing Equipment Code has been signed, Secretary Bennet informs us there are three varieties of members in the Industry, as follows: (1) Members of the National Printing Equipment Association, Inc., (2) Members of the Industry, and (3) Members of the Code (being those members of the Industry who voluntarily assent to the Code).

Officers of National Printing Equipment Association, Inc.

President, Arthur Bentley, Miehle Printing Press and Manufacturing Company, 14th and S. Damen Avenue, Chicago, Ill.

Vice-President, Thomas R. Jones, American Type Founders Company, 300 Communipaw Avenue, Jersey City, N. J.

Treasurer, Joseph T. Mackey, Mergenthaler Linotype Company, 29 Ryerson Street, Brooklyn, N. Y.

Secretary, James E. Bennet, The Babcock Printing Press Manufacturing Company, 38 Park Row, New York City.

Directors (including officers,), Harvey D. Best, Lanston Monotype Machine Company, 24th and Locust Street, Philadelphia, Pa.

LeGrand L. Clark, T. W. & C. B. Sheridan Company, 135 Lafayette Street, New York City.

L. W. Claybourn, Claybourn Corporation, Milwaukee, Wis.

Calvert B. Cottrell, 3rd, C. B. Cottrell & Sons Company, Westerly, R. I.

James S. Gilbert, Dexter Folder Company, 28 West 23rd Street, New York City.

R. V. Mitchell, Harris-Seybold-Potter Company, Cleveland, Ohio.

A Program to Lessen Accidents

In the Printing Plant Drafted Under Auspices of American Society of Safety Engineers with Assistance of Lay Committee

By W. Dean Keefer*

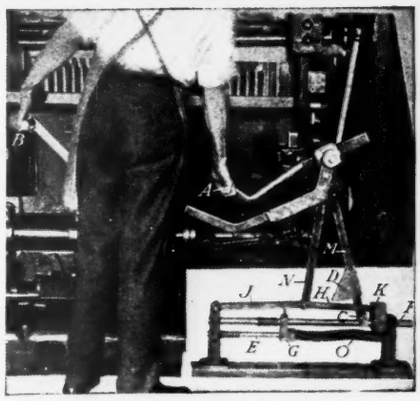


Fig. 1.—Two-handed tripping device for guillotine paper cutter. The toggle is set by depressing arms J and H. End of arm H is pinned to block K, which in turn is pinned to shaft F. Shaft F is free to slide on its supports so that any lateral movement of block K will move shaft F. Block G is pinned to shaft F but is free to slide on shaft E, which is pinned at both ends so that it has no movement. As toggle arms are depressed, block K, shaft F and block G all move to the right and compress spring O. Toggle is held in this position by cam D, which is attached to an extension M of handle A, and also by an extension N of handle B, both of which are over the center point of the toggle and prevent its moving upward. Clutch is thrown by depressing handle A. Handle B is free on an extension of shaft to which handle A is keyed. Handle B therefore will also move downward in consequence of its own weight whenever A is depressed, unless it is held by the operator in the "up" position. If both handles A and B are permitted to move downward, cam D and extension N of handle B will move to right away from center of toggle, thus permitting toggle to break by action of spring O under compression, block K is forced to left and strikes C (part of extension M of handle A) and moves it also to the left, thus throwing out clutch instantly. To operate the machine and prevent the toggle from breaking, the operator must hold handle B. Otherwise toggle is released.

Reports over a period of years to the National Safety Council indicate that the printing and publishing industry has had, on the average, rather low accident frequency and severity rates, as compared with other leading industries. The reporting units of the industry, during this period, have shown an encouraging downward trend in these rates. For example, the group of plants which reported their 1932 accident experience to the National Safety Council, as compared with the groups which reported for 1926, reduced their accident frequency by 51.6 per cent; and their accident severity by 91.3 per cent.

The 1932 accident experience which was reported represents 43 different plants with an average total of 11,064 employees who worked 23,444,000 man-hours.

To aid in this problem of accident control, the National Safety Council has recently issued a new industrial pamphlet entitled "Safety and Health in Job and Newspaper Printing Establishments." This pamphlet† was drafted under the auspices of the American Society of Safety Engineers—Engineering Section Committee on Printing and Bookbinding Establishments.

The pamphlet discusses the hazards encountered in job and newspaper printing, and explains how such hazards may be decreased or eliminated.

Most of the accidents in job and newspaper printing establishments, states the pamphlet, may be traced to the following six sources. Handling roll and flat stock, floors, hand tools, operation of the presses, clothing, handling equipment, such as rollers, smut rolls, etc.

The pamphlet warns that the men should be carefully and fully trained for the safe handling of heavy roll stock. There are safety suggestions for handling rolls on sidewalk elevators, delivery of roll stock in a ship hold, conveying of stock to a storeroom or a press, tiering of stock, and the handling of flat stock.

In discussing floor hazards, it is suggested that sheet metal often can be used effectively to catch oil from cylinder and small rotary presses that are not guarded with open pits in which motors and driving gears are located. It is suggested that "proper lubrication with correct oil or grease" will prevent much of the extensive waste of oils often seen; and regular wiping of the presses after runs will eliminate a large amount of the dripping prevalent in some plants.

Another problem is presented by the paraffin which may be sprayed on presses to prevent offset of work in the process. Some plants, to remove the paraffin which settles on the floor, the press frame, the press steps and surrounding objects, use instead of a scraper special strong wire brushes which revolve on motor-driven shafts and cut into the caked grease, dirt and paraffin.

Another group of hazards is from hand tools. These may include spindle chucks, wrenches, backup bars, and roll levers left lying on the floor at the rear of the rotary presses.

Hazards in handling equipment include the shifting of ink rollers, the placing of spindles in hazardous spots, the accumulation of rags and waste, ragged cable wire for hoists, and lack of care in the fastening of set screws.

Fig. 2.—Safe arrangement of flat stock.

*Director, Industrial Safety Division, National Safety Council.

†Editor's Note: In the interest of a program of accident prevention, the National Safety Council offers to send a free single copy of the pamphlet "Safety and Health in Job and Newspaper Printing Establishments" to any executive of a printing or publishing establishment who may request a copy.

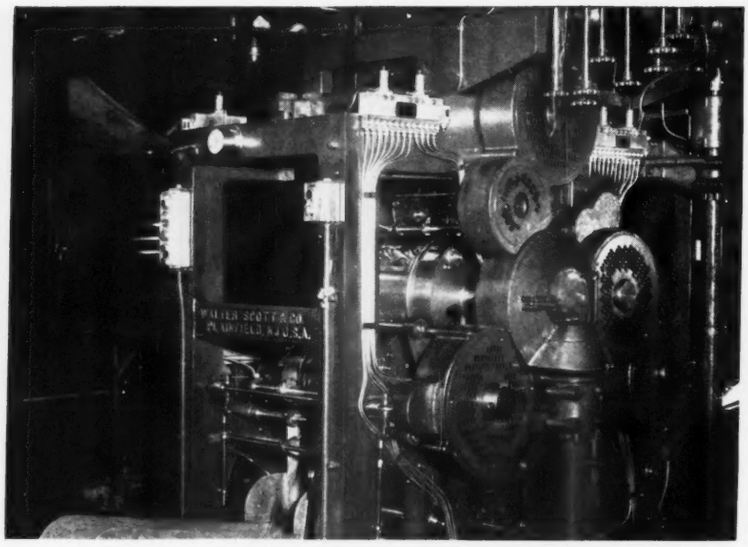


Fig. 3.—Well guarded delivery end of a modern rotary press.

Operation of rotary cylinder and hand-fed presses represents by far the most serious hazard in a printing establishment. Here again, many injuries would be avoided through greater care in keeping loose paper from the floors, and tools and equipment in their proper places. Modern rotary and cylinder press equipment should include hand rails on upper elevations, toe boards on these platforms and anti-skid surfaces on treads of steps and stairs. There should be frequent inspection of auxiliary cranes on rotary and cylinder presses. Loose strands of cables often cause injuries to hands.

One of the best safety devices for rotary presses is the button control system. A number of these stations, located at strategic points on a press will do much to prevent serious injury to pressmen and others.

Other hazards relate to starting of the press without an effective method of general warning, hazards to the fingers in rewebbing a roll of paper on a press, danger of minor cuts and bruises from handling plates, carelessness with hand cranks in inking the rollers, and from press delivery equipment which is not properly guarded.

On cylinder presses, hand rails on the steps leading to the feeders and on the platform are of much value in reducing danger of men falling when carrying heavy loads of paper to the feeding section. Another hazard is from storing material beneath presses, when it may be necessary to get this material while the press is in operation.

In the operation of hand-fed platen printing and embossing presses, the hazard may be limited almost directly to the point of operation through the guarding of belts, flywheels, shafting and gears, plus the accepted practice of shutting down in advance of oiling, cleaning and adjusting. Some of the more recently designed platen presses have safety devices which stop the machine without injury to the operator if the hand is in the danger zone. Also guards have been developed for attaching to older models.

For guarding guillotine paper cutters a tripping device has been designed which will prevent injuries under the knives when the operator is attempting to adjust the material being cut. (See Fig. 1.)

Usually there is but little hazard in the operation of monotype and linotype machines aside from fumes, lead dust particles, lead "poisoning" and possible contact with the machine belts.

In the electrotype foundry the guard for plate saws is generally an adjustable plate glass shield on a standard. Trimmer machines in many plants are equipped with suction devices to remove the cuttings. Suitable ventilating hoods should be provided for the lead melting pots. Severe burns in the foundry may be caused through the use of ladles which are not thoroughly dry for removing hot metal.

Suggestions are made for the proper treatment of clothing in order to avoid accidents.

Improper lighting has been a contributing or a direct cause of many accidents. Periodic inspection of all gears, set screws, shaft keys and nuts on presses and other machines, as well as thorough inspection of all parts of the plant at frequent regular intervals are important safety precautions.

The chief hazards to health in the printing trade are lead, carbon monoxide and improper ventilation. The chief diseases to which persons in the printing trades are subject are tuberculosis, lead poisoning, skin affections, respiratory diseases other than tuberculosis, disturbance of the digestive tract, and not infrequently functional nervous disturbances. Proper exhaust ventilation should take care of the hazards from lead in the form of dust. Exhaust ventilation devices adapted for the removal of carbon monoxide from the gas burners under the melting pots will take care of this hazard. Skin affections arise usually from type plate cleaning processes, and sometimes from different inks. Organized efforts should be made to keep these operations just as clean as possible, and gloves should be provided for the hands. Other health hazards should be watched through the active cooperation of the individual plant physicians and plant managers.

Letters to the Editor

"Wizard with Scissors"

Dear Editor:

"I'd like to see the fellow who cut this mat."

Just how often the newspaper stereotype foreman in the job-work department is heard repeating this statement is dependent entirely upon those in charge of the local advertisers' mat supply.

Occasionally, mats on ad cuts are received by his department in such a mutilated condition that a satisfactory reproduction is almost impossible. When the various illustrations arrive, they are often separated in such a haphazard manner that a considerable amount of time and effort is lost preparing them for casting. Even then, the impairment cannot always be corrected.

Tracing this matter to its source, one will find that the mat handler is altogether mistaken as to the proper condition of the mat for the best possible results. When old mats of former ads are returned, some of these fellows become "wizards with scissors" and proceed to cut each illustration separately, in order to file them away. They may even alter them to fit a drawer or envelope, never realizing the trouble such a procedure causes by close and irregular trimming.

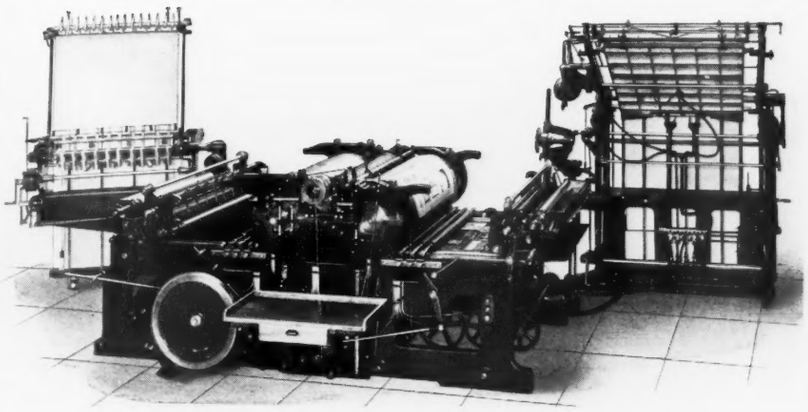
If a few comprehensive and courteous suggestions were sponsored by the stereotyper and distributed to these "innocent" offenders, it might in turn have a tendency to eliminate this troublesome problem wherever it exists.

Yours for better stereotyping,

G. R. A.

Advertisers will appreciate it if you will mention Printing Equipment Engineer when writing to them about equipment or supplies.

Latest Printing Equipment Mechanisms



View of Miller Simplex Two-Color Automatic Press with feeder and delivery swung open to make the press easily accessible.

Miller Simplex Two-Color Automatic Press

Announcement has been made of the Miller 25 in. by 38 in. Simplex Two-Color Automatic Two Revolution Press. The press is manufactured by the Miller Printing Machinery Co., Pittsburgh, Pa., and has a speed range of 2000 to 3000 sheets per hour or 4000 to 6000 impressions.

The press is so arranged as to provide unobstructed access to forms, rollers and fountains at both ends of the press by swinging away the feeder and delivery.

The bed movement is of the Simplex "Harmonic" type which provides a free and easy movement over reverse points without employment of air cylinders. The impression cylinders are 18½ in. diam. The transfer cylinder is 9¼ in. diam.

Ink distribution is effected by a combination ink table and vibrating drum distributor, rotary press type. All three 2½-in. form rollers (three to each form) clear a full 24½-in. form. The distributor rollers are 2½ in. diam.

The automatic feeder is of the Miller Simplex suction pile swing-away type and is of 36-in. stock capacity. It is equipped with two-sheet detector and Simplex automatic side registers, both sides. If the sheet fails to carry to either drop-guide in perfect register, or for some reason buckles after reaching the drop guides, the press is automatically tripped and stopped, bringing into play a safety tumbler pin, permitting grippers to remain open, leaving the sheet on the feed board. The feeder may be reloaded while the press is in full operation.

The extension delivery (40-in. stock capacity) is of the Simplex type and is continuously driven at predetermined speed, regardless of impressional speed of press.

The press will handle stock from onion skin up to and including pulp-board not exceeding 26 points.

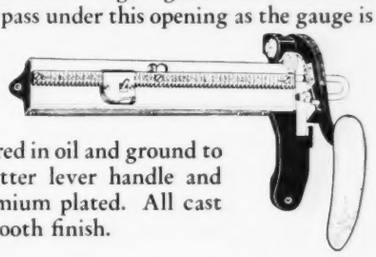
The press is driven by a variable-speed motor with push-button control. Silent chain drive throughout. Motors and air pumps are located under the press proper. The flywheel is located on the operating side of the press to permit gear side to be placed close to pillars or wall. On D. C., 7½ h.p. is required to run the press; on A. C., 10 h.p. is required. To run the pumps, 1½ h.p. is required.

Overall dimensions of the press with feeder and delivery closed are 7 ft. by 17 ft., 3 in. With the feeder and delivery open, dimensions are 10 ft. by 22 ft., 4 in. Net weight, including motors, approximately 19,500 lbs.

Handee Lead and Slug Cutter

A new lead and slug cutter is being made by the Handee Machine Co., Toledo, Ohio. It is known as Model 6A and is furnished in two sizes—60 and 90-pica lengths. The table or bed is made of channel-formed heavy gauge steel, which carries a machine-cut steel gear rack upon which slides a steel measuring gauge, engaging the gear rack at pica or half-pica measures. Large, plain figures show each 2-pica graduation.

The cutter is furnished with a right-hand gauge rod which can be thrown back out of position when not in use. This gauge is fitted with a micrometer head for cutting by points from 6 points to 25 picas. The reading of measures for the gauge rod setting is visible through an opening in the cutter bed. Large figures on a flat steel scale pass under this opening as the gauge is manipulated to show each setting. The cutting knives are made of high carbon manganese steel, tempered in oil and ground to accurate size. The cutter lever handle and sliding gauge are chromium plated. All cast parts are lacquered, smooth finish.



New Stoessel Single-Color Rotary Web Press

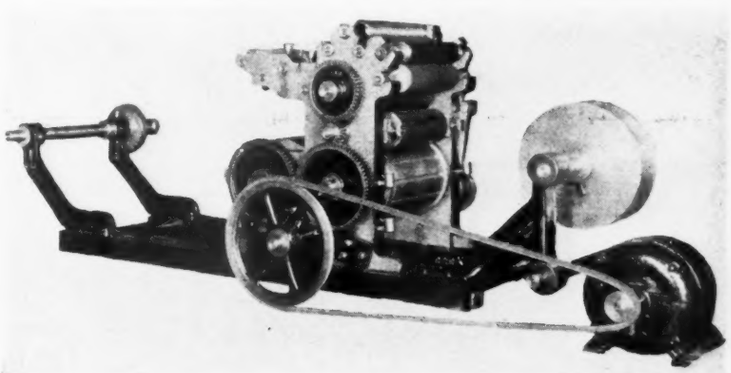
M. Stoessel, 812 Greenwich Street, New York, N. Y., has announced a recently prefected Single Color Rotary Web Press shown in the illustration below.

Speed and versatility are features claimed for this press which is adaptable to printing from the roll on practically any material such as gummed paper, cellophane, tissue, cardboard, metallic coated papers and cloth at a rate of speed up to 165 feet per minute. Printing can be done from curved electrotypes, stereotypes, or rubber plates, depending upon the nature of the work and the stock used.

The dimensions of the plate and impression cylinders are 8 in. width and 18 in. circumference. The impression cylinder is so constructed as to permit adjusting the amount of impression according to the type of plates used and the thickness of stock to be printed. Also by special adjustment the pull of the stock is regulated to enable printing any size cut up to 18 in. The illustration shows the press with a rewind delivery. It is also supplied with a cutting device for sheet delivery, slitters, scorers and perforators. The inking system consists of three distributor, two rider and two extra large

Continued on page 26

View of Stoessel Single-Color, 18-in. Rotary Web Press with Rewind Delivery



New Intertype Development

Hand-Set Display Lines Can Be Cast on Keyboard Composition Unit Through Redesigned First Elevator, Cam and Lever

By L. W. Willis*

Utility, wider range and flexibility have been the paramount considerations behind Intertype developments. These are, of course, matter-of-fact considerations to which should be added the fundamental basis for all new conception, namely, that progress depends upon adaptability to present conditions and future trends. It is believed that the creation of the new dual-duty Intertype machine is a progressive step giving expression to these considerations.

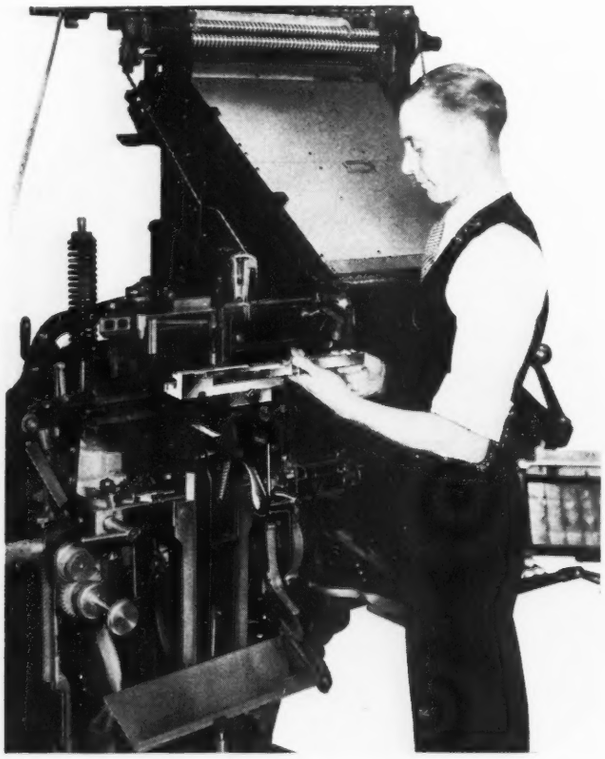


Fig. 1.—The first elevator is the essential part concerned in casting slugs from hand-set matrix lines on the Intertype. The first elevator head is hinged at the top of the slide so that it may be turned forward in order to receive a matrix line which has been composed by hand in a special stick (shown in Fig. 2). The first elevator is then turned back to normal position and the machine is started by means of the special starting lever shown at the right near the hinged elevator head. After the line has been cast, the elevaor rises and remains stationary at normal position (it does not travel to tranfer position) so that the matrices and spacebands may be removed at once for distribution to the case.

*Patent and Research Engineer, Intertype Corporation, Brooklyn, N. Y.

This new development permits the casting of hand-set display lines, emergency lines, and corrections in all sizes including 60-point full-width faces, in addition to ordinary keyboard composition.

The system is founded upon the use of an improved style of hand composing stick in conjunction with a duplex control mechanism for operating the first elevator. As will be seen in Fig. 2, the hand composing stick is L-shaped and is similar to an ordinary printer's stick. Matrices and special spacebands, the short wedges of which conform to the shape of a matrix, are assembled at a common level. The spacebands lie edgewise on the widened floor or base of the stick. The lower ears of the matrices and spacebands rest against a rail along the floor and a V-shaped bar on the upright wall of the stick holds them from tipping over by engaging in the V-notch at the top. The upright wall of the stick terminates in a short tang which fits in the usual spaceband grooves in the elevator jaws. An adjustable end block is provided which

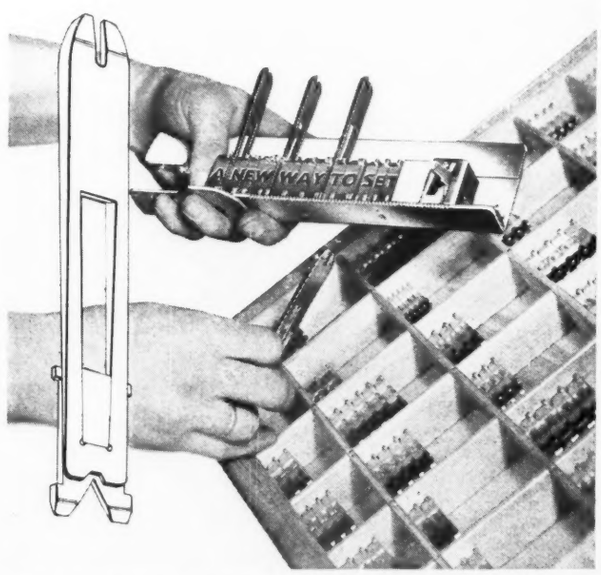


Fig. 2.—The operator is assembling matrices from a case by hand in the new Intertype composing stick. The inset shows the new special spaceband which conforms to the matrix shape. These spacebands are inserted between the matrices just the same as regular spaces in hand composition and function like regular spacebands to justify the line.

may be set according to the required line length indicated on a scale and locked by means of teeth on the edge of the stick and a snap detent finger.

A matrix cabinet containing cases of standard type layout is a part of the new system. The special spacebands are tapered at the top so that they may be inserted easily between the matrices as required. Hand-space matrices, of course, may be used if desired. New matrix faces up to ⅝ in. in height, of full body width, are now being manufactured for use with this new all-slug Intertype system.

Shown in Fig. 1 is the "head" of the first elevator which is hinged so that it can be swung back out of normal position. This provides free access for sliding the tang of the composing stick into the spaceband grooves whereby the stick is firmly supported flatwise. Upon unlocking the finger detent and pushing on the end block, the line can be slid into the elevator jaws. A shoulder on the end block serves to limit the pushing movement so that the last or left-hand matrix is located just inside the usual matrix retaining pawls in the jaws. After the stick is removed and the elevator head has been swung back to normal, the machine may be started by pulling forward the vertical auxiliary starting handle which is shown between the tipped back first elevator head and the right-hand vise frame locking handle in Fig. 1.

When the auxiliary starting handle is used, a special feature of design provides that the first elevator will only travel down to casting position and back to normal. This shortened cycle of travel of the first elevator permits tipping back the head and pushing the line back onto the stick again before the machine has come to rest. Considerable time is thus saved by eliminating motion of the elevator up to transfer position and back to normal.

The first elevator is caused to operate through a short cycle or through its usual full cycle by an automatic duplex control. This comprises an extra cam track for the usual first elevator lever, the cam being devoid of the raised surface which ordinarily causes the elevator to travel up to the transfer position. A new lever, freely floating on its pivot shaft, is provided alongside the standard type lever for working on the usual first elevator cam. Both levers are normally linked together by a hook carried by the standard type lever connected to the new auxiliary starting handle.

With this arrangement, the first elevator will move through its full or normal cycle unless the hook is disengaged. Such disengagement takes place whenever the auxiliary starting handle is pulled whereby the first elevator moves under control of the low track or short-cycle first elevator cam.

After each short cycle of operation of the first elevator, the hook links up again with the other or new first elevator lever, thus automatically restoring the machine to normal ready for keyboard-set lines. Keyboard or hand-set lines can therefore be cast whenever desired.

Any model Intertype equipped with the Intertype automatic quadding and centering device can be adapted to this new composing system.

A.N.P.A. Mechanical Conference in St. Louis

The A. N. P. A. Mechanical Committee at a meeting held February 26, selected St. Louis as the meeting place for the 1934 Mechanical Conference. The dates will be June 4, 5 and 6 unless some contingency now unforeseen should force postponement to June 11, 12 and 13.

The Committee members also outlined the program which will be substantially as follows: The first day will be devoted to the mechanical problems of the smaller plants. Speakers to lead the discussions at these sessions will be selected from the smaller member offices.

It is planned to invite a representative of the Duplex Printing Press Company to attend the Conference for the purpose of answering questions concerning the Duplex tubular press.

One session will be devoted to the modern newspaper composing room, its equipment and operation. A representative each from the Mergenthaler Linotype Company and the Intertype Corporation will be invited to discuss recent developments in keyboard line-composing machines.

One session will be reserved for general discussion on pressroom, stereotype room and photo-engraving problems.

The session at last year's Conference at which the various manufacturers sent representatives to describe high-speed roll changers was so successful that the Committee decided to invite the three principal manufacturers of press drives to send representatives to a similar session at this Conference.

One session has been reserved for representatives of the advertising agencies in order to give them an opportunity to discuss freely with the newspaper mechanical men the numerous problems which arise in connection with the printing of agency advertising, either in black-and-white or colors. A St. Louis agency man will be invited to lead the discussion.

A feature of the Conference this year will be a rather extensive exhibit of newspaper advertising in color.

Screenless Printing By Projection

Amazing Progress in Stepping Up Number of Impressions from Collotype Plates — Frank Sullivan Credited with Achievement

By J. S. MERTLE*

A CLOSE survey of the Graphic Arts reveals the interesting fact that offset-lithography is probably the most widely discussed branch of reproduction and printing. Scarcely a day passes without new processes, methods and mechanical devices intended for the advancement of the offset plate-maker and printer.

The most brilliant photomechanical and printing intellects are at work devising and perfecting new ways and means, and laboring hand in hand with the machinist and draughtsman for ever-increasing progress in an art, that from the point of general practical application, is scarcely more than fifteen years old.

In view of the comparative infancy of offset lithography, this state of scientific effort is not surprising—it is merely another indication of the ceaseless march of progress—once the paths toward perfection have been illuminated by the beacon light of pioneer invention and the all-important gauge of popular demand.

This article was written by J. S. Mertle, an authority on photo-engraving and photolithography. He is also the author of a comprehensive book entitled "Encyclopoedia of Reproduction," soon to be issued. This article, "Screenless Printing by Projection," is reproduced here without further comment. It is reprinted from the original in the current issue of *Penrose's Annual*.

The Graphic Arts as a whole have thus been acutely interested in offset-lithography, with the result that older and perhaps more beautiful methods have been relegated to the back-ground. Have they?

For instance Collotype? Who hears of Collotype today? Yes, it will surprise the world, to hear that from the point of revolutionary improvement, the progress made in Collotype (photogelatin printing) exceeds that of any other method of reproduction and printing.

Even to the small circle of the initiated, the name "Collotype" immediately calls to mind a rather uncertain printing process, invented about 1855, in which the printing surface consisted of a film of light reduced gelatin. It further recalls the trials and tribulations of a method, producing at the most, about five hundred passable impressions from a plate—these frequently at the price of much turmoil and great financial expense.

No wonder that the printing world shied from gelatin—but will it continue to shy when it is acquainted with the fact that the edition of 500 has been increased to 6,000, and

*Author and Instructor on Photomechanical Subjects, Oshkosh, Wis.

Continued on page 24

John R. Rogers Passes Away

John R. Rogers Was Formerly Consulting Engineer of the Mergenthaler Linotype Co.

JOHN RAPHAEL ROGERS, for 39 years associated with the Mergenthaler Linotype Company in an engineering capacity, died Sunday, February 12, at his home, 251 Gates Ave., Brooklyn, N. Y. He was 77 years of age.

To Mr. Rogers must be given a generous credit for broadening the scope of usefulness of Mergenthaler's original one-letter Linotype. He took literally thousands of ideas submitted by machinists and operators of the Linotype and developed and refined those which were worthwhile so that they would be commercially successful. It is said that he patented more than 500 devices for composing machines.

In 1881, Mr. Rogers began experimenting with composing machinery. In 1888 he took a hand-made model of what afterwards developed into the Rogers Typograph to Cleveland where a company was organized to manufacture it.

About 1890 the Typograph came into competition with the Mergenthaler Linotype. Through a suit brought against the Rogers Typograph Company, the Mergenthaler Linotype Company obtained an injunction on the production of a slug. Previously, Mr. Rogers had invented a form of double-wedge spaceband which brought about a three-cornered interference suit with Ottmar Mergenthaler and another inventor, John D. Schuckers, who had experimented on automatic spacing but never had built a composing machine.

Mergenthaler, Schuckers and Rogers filed applications for patents about the same time. Without the parallel wedge spacing mechanism each inventor's machine would not be successful. Mr. Rogers bought the application of Mr. Schuckers. After some years of litigation the broad principle of the double wedge was awarded to Jacob Schuckers and became the property of the Rogers Typograph Company. As the Linotype could not proceed without the use of the double-wedge spaceband, and after years of litigation and large sums of money had been spent, the Mergenthaler Company bought all the assets of the Rogers Typograph Company and consolidated the two companies in July, 1895. It is not known what Mr. Rogers received for his patent rights, but it was a considerable sum of money.

In 1895 he entered the employ of the Mergenthaler Linotype Company as chief of its experimental department. At that time only two thousand linotypes had been built.

For many years Mr. Rogers was a trustee of Berea College, Kentucky, and also a trustee of Oberlin College in Ohio, from which place he was graduated. For his contribution to education in many ways he received from Berea College the degrees of Master of Arts and L.L.D., and from Oberlin College the degree of Doctor of Science. He was also engaged in other educational activities, both local and national while a resident of Brooklyn.

Iowa-Illinois Foremen to Meet on Successive Days

A SPIRIT of fraternity is being brought into play by the officers of the Iowa and Illinois Composing Room Executives' Associations. This is being accomplished by setting dates for the conference of each organization on successive days so that as many members as possible may attend both conferences.

The June meeting of the Iowa Composing Room Executives' Association will be held in Clinton, Ia., June 11-12, Leo J. Carle, superintendent of the Mason City (Ia.) *Globe-Gazette* composing room, is president.

According to Russell B. Miller, president of the Illinois Composing Room Executives' Association, the June meeting of that body will be held in Moline, Ill., on Sunday, June 10.

It has been agreed by all officers of these two organizations to extend invitation to all members of both associations to attend both conferences.

Mr. Carle states that Moline is so situated that it will be most convenient for the Iowa members to meet on Sunday, June 10, with the Illinois Association and leave for Clinton the same evening.

Much interest is centering around the expected report relative to the results obtained from the adoption and use of a standardized composing room cost system. The cost system was unanimously endorsed for a year's trial in Iowa composing rooms at last year's conference and full details of the findings of the committee were carried in the July, 1933, ENGINEER. Leon A. Link, superintendent of the Des Moines *Register-Tribune* composing room is chairman of the committee which formulated the cost system. Tom Bleurer of the Davenport *Democrat* and Paul Kamler of the Clinton *Herald* are the other members of this important committee.

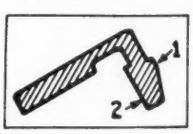
James A. Cameron Dies

It has been announced by the Cameron Machine Co., Brooklyn, N. Y., that James A. Cameron, president of the concern, passed away in December, 1933.

Chromium Plate for Worn Autoplate Locking Bars

DOLPH BOBE, superintendent of stereotyping, Dayton *Daily News*, tells us that recently he had the matrix locking bars on a Junior Autoplate coated or built up with Chromium 0.010 in. thick along the edge where the bars contact the cylinder when the box is closed in casting position so as to prevent metal casting burrs or fins along the edge of the stereotype plate.

The bars are adjustable to the mat and when so adjusted may have a slight gap between bar and cylinder. The edge of the locking bar *2* shown in the sketch which comes in contact with the mat wears off a little after long usage. After adjusting the bar to cause the surface *2* to come closer to the mat, the edge or locking surface *1* is drawn away from the cylinder just that amount, and in time this space will be sufficient to permit molten metal to cast a burr or fin on the plate.



The chromium plating is applied directly to the edge *1* of the bar shown in top view in the sketch but some of the plating naturally will extend beyond this surface on either side. This spread of the plating is an advantage inasmuch as it will adhere more firmly to the bar.

FROM TYPE LIKE THIS

TRADE LINOTYPE MARK

Clear down to type like this . . . from 5 point to 144 point . . . the complete Linotype composition system offers a convenient, economical method of setting any job that comes into the shop. *The Single Distributor Linotype* for ordinary composition requirements. *The Continuous Composition Linotype* for mixed composition or quick shifts. *The Two-in-One* Linotype for text and display. *The All-Purpose Linotype* for maximum flexibility and full range of sizes.

Linotype Bodoni Family

MERGENTHALER LINOTYPE COMPANY, BROOKLYN, N. Y.

(Continued from page 15)

form rollers. The adjustable fountain is easily accessible for cleaning or for readjustment purposes.

Bench Model Hacker Block Leveller

A new 9 in. by 15 in. Bench Model Hacker Block Leveller has been brought out by the Hacker Mfg. Co., 320 So. Honore St., Chicago, Ill. This machine is intended as a means of saving press make-ready since blocked plates can be levelled on it to pull more uniform impressions. It is also intended for use by small plate-makers whose volume does not require the greater speed of the larger Hacker machines.

The work table is free-wheeling. After a preliminary spin with the hand the action of the cutter upon the block keeps the table rotating. The slow-speed table is stopped by gentle pressure of the palms upon the outside rings. The lower ring moves the clamp jaws in and out. Clamps have a down-position for planing warped block flat and an up position for pulling flat blocks down firmly against plate and table.

In operation, the cutter is drawn across the work from outside to center and back. Path is spiral. Every part of cutter passes every part of the block and the cut is parallel with the revolving work table.

A single six-tooth cutter 2¼ in. diam. is attached to the spindle by a single nut. A graduated hand wheel adjusts the "bite" of the cutter by thousandths of an inch. It is claimed

View of New Hacker Bench Bench Model Block Leveller Assembled with Motor and Switch Ready for Operation.

that the cutter will remove 0.001 in. or 1/16 in. easily and with accuracy.

Chips from the work are drawn away by a vacuum fan and are blown out beneath into box or bag.

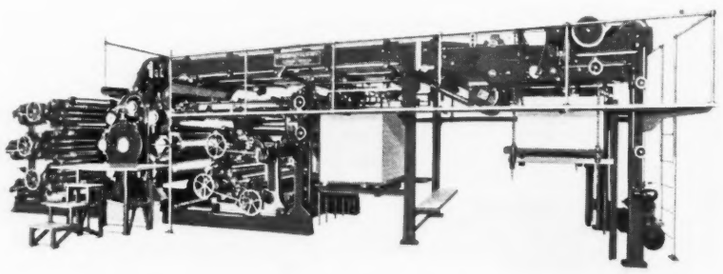
Height of the machine is 25 in.; floor space required is 27 in. by 32 in.; motor is ½ h.p. An iron floor pedestal is optional equipment.

Claybourn Five-Color All-Size Rotary Press

The new Five-Color All-Size Rotary Press which has been announced by officials of the Claybourn Corporation, Milwaukee, Wis., is obtainable in five sizes to accommodate any class of work. The entire unit consists of press, automatic feeder and delivery, motor and control with all accessories.

It is said that through new developments this rotary press may be used in moderately short runs as well as big jobs of work.

A list of features claimed for this press are as follows: (1) Five color printing unit with automatic feeder and delivery, (2) Extra heavy sideframes and base to assure accuracy, (3) Feeder automatically trips cylinder and ductor



View of New Claybourn Five-Color, All-Size Rotary Press Recently Demonstrated in Milwaukee at the Plant of the Claybourn Corporation.

roller, (4) New accelerator and sheet control for speed, (5) Claybourn spirally grooved precision plate cylinders, (6) Claybourn rapid register hook system, (7) Positive automatic trip mechanism, (8) Inker roll-back and quick action lock-up, (9) Automatic ink roller throw-off and color control, (10) Quick action fountain feed adjustment, (11) Roller sockets with replaceable liner bearings, (12) All ink rollers interchangeable, (13) Balanced roller stocks of swaged steel tubing, (14) Inkers operate in open position with power, (15) Large oversize tympan cylinder journals and bearings, (16) Special high speed bronze plate cylinder bearings, (17) Helical main drive and cylinder gears, (18) Silent chain motor drive and push button control, (19) Pressure oiling system on all main bearings, (20) Micrometrically graduated cylinders for register system, (21) Feeder pile positioned micrometrically, (22) All joggers set to exact predetermined position.

A New Chuck for Non-Returnable Cores

Announcement has been made that the U. S. Manufacturing Co., 129 East Market Street, Indianapolis, Ind., has perfected a device called the Economy Chuck for use by newspapers and paper manufacturers. It is made especially for use in connection with non-returnable cores, although it can be used on any type core.

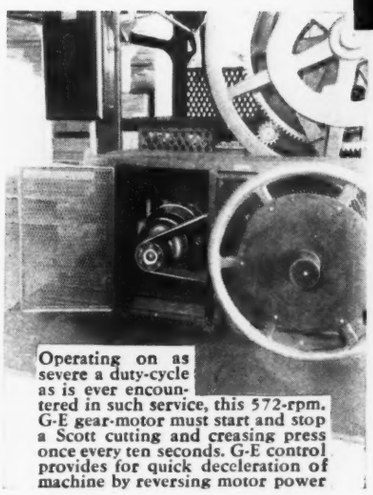
John Rusie, pressroom superintendent of the Indianapolis *Times*, stated that the chucks have been used in the *Times* pressroom for several months with non-returnable cores. He also said that great savings to the newspaper industry in freight, labor, paper waste, storage and auditing could be effected by the use of this device, in addition to eliminating the inconvenience of returning cores to the newsprint mills.

The device is suitable for any press using rolls of paper either shaft or reel type. The shaft type is placed on the shaft and inserted in the core, then by adjusting the threaded shoulder with a spanner wrench the outer member expands with the core and the inner member simultaneously contracts on the shaft. This double action immediately centers the roll of paper which eliminates slippage and vibration, giving a smooth feed of paper into the press.

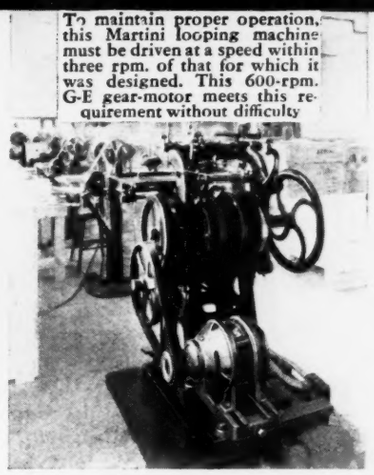
The reel type has the same action as the shaft type except the contracting movement on the shaft. The chuck is placed

HOW G-E GEAR MOTORS IN THIS MODEL PLANT . . .

- . . ADD CONVENIENCE
- . . REDUCE NOISE
- . . . . IMPROVE APPEARANCE
- . . . SAVE SPACE



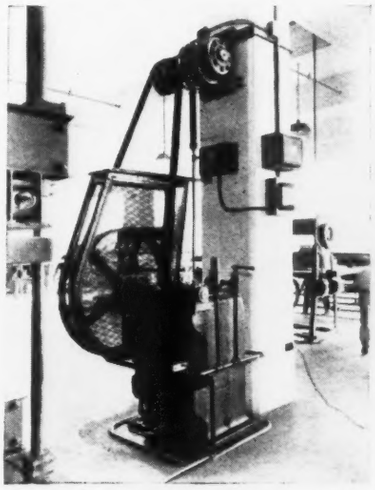
Operating on as severe a duty-cycle as is ever encountered in such service, this 572-rpm. G-E gear-motor must start and stop a Scott cutting and creasing press once every ten seconds. G-E control provides for quick deceleration of machine by reversing motor power



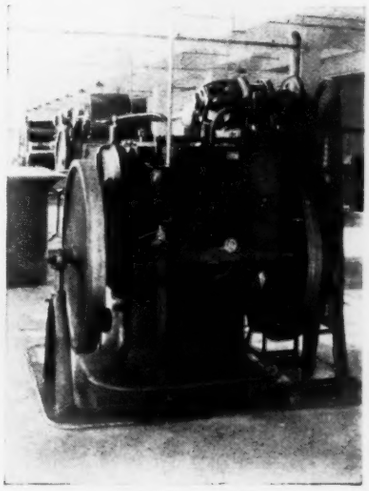
To maintain proper operation, this Martini looping machine must be driven at a speed within three rpm. of that for which it was designed. This 600-rpm. G-E gear-motor meets this requirement without difficulty

THE model layout of the National Card Mounting Company's plant in New York City provides an individual drive for each machine — with all motors mounted above floor level, conveniently accessible. Contributing materially to the fulfillment of this plan, are the four G-E gear motor applications* shown at the right. They improve plant appearance; save space; and eliminate back-gearing, along with the noise it so often causes and the additional floor area it so often requires.

Each of these G-E gear-motors is a compact unit — a combination of a normal-speed motor and a built-in, helical planetary gear-reduction system running in oil to assure smooth, operation. Standard ratings are listed from 1/6 to 75 hp., and from 11 to 600 rpm. Other ratings can be supplied to meet the individual requirements of the driven equipment — whatever its characteristics may be.



Mounted conveniently out of the way, this 360-rpm. G-E gear-motor controlled by a G-E pressure governor provides power for a 75-ton hydraulic press. Despite its slow speed, this compact drive requires no countershafts



This compact 572-rpm. G-E gear-motor, mounted right on the machine, powers a Thompson cutting and creasing press requiring high starting torque. G-E preset speed control permits the operator to preset it . . . forget it

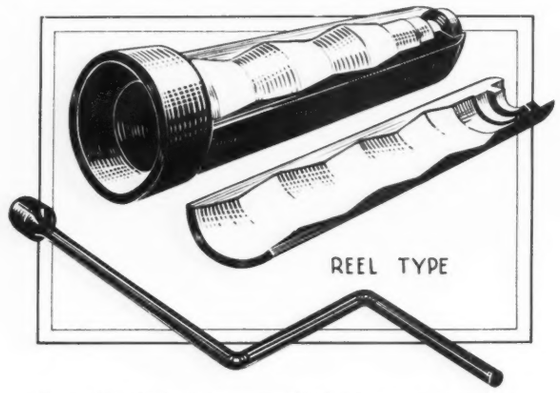
Your own low-speed drives can be equipped to advantage with G-E gear-motors. You will find them readily adaptable, simple to install, dependable in performance, smooth in operation, long in life — the kind of drive that will save you money. For complete information, address the printing-equipment specialist at the G-E office nearest you; or write General Electric, Dept. 6B-201, Schenectady, N. Y.

*Installed by Naumer Electric Company, a G-E Motor Dealer, New York City. The facilities of G-E Motor Dealers are at your command for every purpose requiring electric power.

010-1

GENERAL ELECTRIC

in the core and then expanded against the core, by turning the inner member with a speed wrench to lock it in position. Then the roll of paper is placed in the reel.



View of Reel Type Economy Chuck for Use in Connection with Non-Returnable Cores

The device is constructed of steel and has few working parts. It is claimed the Economy Chuck will not damage or tear the edge of the paper.

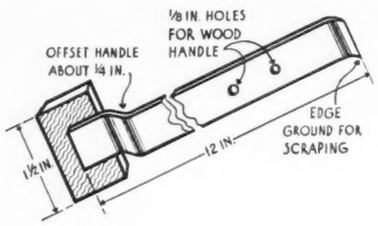
Scraping Tool for Emergency Work

An inventive turn of mind must be brought into play when printing machinery doesn't function as it should, due to unforeseen causes, especially when the trouble must be eliminated quickly and the proper machine tools are not available.

An instance of this kind occurred in the plant of the Burlington (Vt.) *Free Press* when Eugene E. Myers, foreman of the pressroom found it necessary to free a hot bearing in one of the plate cylinder boxes on a printing press. The box and journal were scored because of hard grease or because some gritty substance worked its way into the bearing through the lubricating channel with the grease.

Rather than dismantle the press in order to polish the journal in a lathe, Mr. Myers worked out another means for scraping the journal and bearing by hand, which work was accomplished in about four hours' time.

In order to make a hand scraper he secured a 12-in. finishing file and ground off a 1½-in. piece which was fasted to a 12-in. piece of banding steel, T-fashion, by welding in two places.



Scraping tool used to smooth plate cylinder bearing in plant of the Burlington (Vt.) Free Press.

The welding did not remove the temper from the file and was sufficient to hold it to the handle.

A cap was removed from the press frame and the front half of the bearing box was taken out. A stereotype flat cast was shaved to the same gauge as the lower part of the box, placed in position and the frame cap was put back in.

The cylinder was rolled away from the back half of the bearing which gave enough working clearance to file the journal and clean out the score marks by a rolling action just like the scraping of a bearing. About one-eighth of the journal could be dressed at a time. The cylinder was rolled progressively until cleared up. The bearing was then scraped and the box returned to place on the press.

For a period of a week following treatment of the scored journal and bearing, Mr. Myers introduced a generous amount of oil and graphite, since which time the cylinder has operated satisfactorily without any trouble.

Patents For Printing Art

In All Branches Represented this Month — Activity in Offset-Lith and Newspaper Printing Machinery Continues

JANUARY-FEBRUARY

Printed Copies of Patents Are Furnished by the Patent Office at 10 Cents Each. These May Be Obtained by Addressing the Commissioner of Patents, at Washington, D. C.

1,938,667. PRINTING PLATE. Thomas Ernest Richards, Auckland, New Zealand. Application June 18, 1930. Serial No. 462,135, and in New Zealand November 22, 1926. 14 Claims. (Cl. 41 — 41.5.)

1. The method of preparing a lithographic printing plate, which comprises applying to the bare metal of a grained aluminum plate, in the form of the work to be printed, an image substance having an affinity for ink and capable of softening when heated, then etching the plate with acid, and then heating the plate sufficiently to develop cavities therein, and causing the image substance to soften and flow into the cavities of the aluminum.

1,939,196. SHEET CUTTING AND FEEDING MACHINE. Howard M. Barber, Pawcatuck, Conn., assignor to C. B. Cottrell & Sons Company, Westerly, R. I., a corporation of Delaware. Application February 26, 1932. Serial No. 595,301. 12 Claims. (Cl. 164 — 68.)

1. A sheet-taking device, a web-feeding unit, an endless web and sheet-feeding carrier, a plurality of units for cutting sheets of different lengths from the web and means for driving the web feeding unit, a selected sheet cutting unit and the endless carrier at predetermined speeds.

1,939,557. INKING RIBBON FOR PRINTING PRESSES. William J. Keenan, Minneapolis, Minn., assignor of one-half to Silas Walter Sears, Minneapolis, Minn. Application April 4, 1931. Serial No. 527,727. 12 Claims. (Cl. 101 — 336.)

1. The combination in a printing press, of a chase having a type space within which type is adapted to be set, a presser member adapted to be intermittently carried toward and from the type space, a pair of spindles mounted adjacent opposite ends of the chase for rotation, an inking ribbon extending over the type space of the chase, secured at its two ends to the spindle and wound on the spindles, an actuating member normally extending on the path of the presser member to be struck and moved thereby, driving means actuated by the actuating member for driving one of the spindles in one direction, driving means actuated by the actuating member for driving the other spindle in the opposite direction, shiftable holding means which when shifted to one position permits only the first mentioned driving means to drive its spindle and which when shifted to another position permits only the second mentioned driving means to drive its spindle and means carried respectively by the spindles and movable as the ribbon is completely unwound from a spindle to shift the holding means.

1,942,504. AUTOMATIC COMPENSATOR FOR PAPER ROLLS. Henry A. Wise Wood, New York, N. Y., assignor to Wood Newspaper Machinery Corporation, New York, N. Y., a corporation of Virginia. Application July 9, 1929. Serial No. 376,889. Renewed July 29, 1932. 14 Claims. (Cl. 242 — 75.)

9. The combination with a printing press and means for supporting a running web roll, of means for changing the length of the web path between the two, and means controlled by the circumference of the web roll for operating the means.

1,942,521. PAPER CUTTER. William L. Valiquette, Dayton, Ohio, assignor to Harris-Seybold-Potter Company, Dayton, Ohio, a corporation of Delaware. Application July 26 1930. Serial No. 470,924. 17 Claims. (Cl. 164 — 59.)

1. A paper cutter having in combination with a back gauge, power driven mechanism for intermittently advancing the back gauge in step by step movement a predetermined amount, independently power driven rapid traversing mechanism for moving the back gauge, means for rendering either mechanism operative at any stage of stock advance and means for inhibiting each of the means when the other is set for operation, both of the means having safety blocking devices to limit the movement of the back gauge at extreme limits of its movement.

1,942,592. MACHINE FOR REDUCING PRINTING PLATES TO UNIFORM THICKNESS. Leslie W. Claybourn, Milwaukee, Wis. Application June 21, 1930. Serial No. 462,884. 8 Claims. (Cl. 29 — 33.)

1. In a machine, the combination of a rotary cutter-head for cutting the back of a printing plate, a rotary conveyor alongside the rotary cutter-head, coacting walls for the rotary cutter-head and the rotary conveyor respectively, a connecting web between the walls, the walls and the connecting web forming a downwardly opening recess extending lengthwise of the cutter-head between the walls, and presser means for the printing plate in the recess.

1,942,593. MEANS FOR REDUCING CURVED PRINTING PLATES TO UNIFORM THICKNESS. Leslie W. Claybourn, Milwaukee, Wis. Application April 18, 1932. Serial No. 605,976. 24 Claims. (Cl. 29 — 21.)

1. In a machine, the combination of a pillow having a curved printing plate receiving trough, a rotary cutter head whose axis of rotation is in line with the axis of the curvature of the trough, sectional presser means in close adjacency to the rotary cutter head, the trough having a curved printing plate supporting face, means urging the sectional presser means toward various portions of the supporting face about its curvature for pressing all printing portions of the printing plate into a sector of a cylindrical plane coincident with the curvature of the supporting face, and means for causing endwise movement substantially parallel with the axis of rotation of the rotary cutter head between the pillow and the rotary cutter head and presser means.

Continued on page 30

A great modern advancement IN THE PRINTING INDUSTRY

The full benefits of frictionless operation in printing presses, folding machines, binders and equipment of all types are available through the use of Timken Tapered Roller Bearings.

The Timken Bearing meets all requirements in printing plants because of its tapered construction, line contact, positively aligned rolls and Timken alloy steel. It saves power; prevents wear; and simplifies lubrication. Accuracy is preserved through the holding of important moving parts in correct and permanent alignment. Machine life is extended because all radial, thrust and combined loads are carried with a wide margin of safety under all operating conditions.

Tapered Roller TIMKEN BEARING EQUIPPED

It will pay you to put this modern advancement in the machines you manufacture.

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

TIMKEN *Tapered Roller* **BEARINGS**

208
Mats Molded
and the slugs
Still Good

Such is the daily experience of a big syndicate house using Certified Mats.

Not newspaper practice, you say. No, but a dry mat that can be molded 208 times without resetting the slugs certainly will never break down the slugs of a newspaper page, molded 5 to 25 times.

And think what such a mat means in the saving of wear on foundry type.

Certified Mats mold with two-thirds to three-fourths the ordinary pressures, saving type, saving equipment, avoiding emergencies.

For Dependable Stereotyping use Certified Mats, made in the U. S. A.

CERTIFIED DRY MAT CORPORATION

340 Madison Ave., New York, N. Y.

Certified DRY MATS

Ludlow Typograph Promotes Typeface Designer

Announcement is made by the Ludlow Typograph Company that R. Hunter Middleton, chief typeface designer, has now been placed in charge of the company's Typeface Design department, succeeding the late George O. Cromwell.

During the past ten years, Mr. Middleton has been responsible for the Ludlow company's designs of such standard typefaces as the Ludlow Garamond and Italic, Garamond Bold and Bold Italic, the Nicolas Jenson italics, the Bodoni True-Cut and Italic and the Tempo Romans. Among Mr. Middleton's original designs in the Ludlow Typograph Company's selection of distinctive typefaces are the Stellars, Delphian, Mayfair Cursive, Umbra and the Tempo italics.

R. Hunter Middleton, Who Has Been Placed in Charge of the Ludlow Typograph Co.'s Typeface Design Department.

Says Offset Jobber is Printer's Opportunity

"No recent development means more to the average printer than the offset jobber. Facts and figures show the enlarged field open for the printer, and his substantially increased profits," said William Guy Martin, Chicago District Manager of Harris-Seybold-Potter, before the North Side Printers' Guild.

"The offset jobber," Martin said, "enables the average printer to compete successfully with other printers—large and small—also to get much additional business from multigraphers, mimeographers, etc."

. . Screenless Printing

(Continued from page 17)

that this large number of impressions can be secured with certainty and at very moderate cost?

The methods applicable to Collotype have recently been revolutionized: Aluminum has replaced glass as a support for the gelatin emulsion; images are projected to huge size directly on sensitized gelatin surfaces, and such images printed at the rate of 600 impressions per hour, using hand-fed direct rotary litho presses.

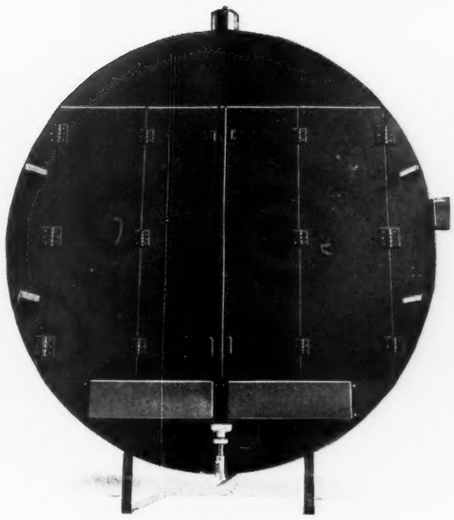
In addition to this great stride, there is an indication that the production may be further increased by the introduction of automatically-fed direct rotary offset presses, employing a new type of blanket for the reception of the image.

A brief historical synopsis of modern Collotype will perhaps be interesting, especially when the details set forth here are the first published remarks of a method brought to perfection without recourse to the usual fanfare of publicity.

The pioneer who may actually be credited with this achievement, especially direct projection on press plates sensitized with bichromated gelatin, is Frank O. Sullivan.

In justice to Sullivan, the idea of projecting on sensitized gelatin with continuous tone negatives for the creation of Collotype printing surfaces, such as first enunciated by him, was discounted by the statement that the results would be disfigured by a "ragged edge"—supposedly caused by halation or spreading of light rays beyond the confines of the image proper.

Continued on page 26



Monotype-Huebner Vertical
Plate-Coating Machine

HALF THE COST

♦ Uniform sensitized coatings are obtained with one-half the solution used by other machines; coatings are thoroughly dried in one-half the time, and less than half the floor space occupied by the horizontal machines is used. The Monotype-Huebner Vertical Plate-Coating Machine will shortly pay for itself with the savings it makes, and will then apply savings toward profits.

Send for Descriptive Folder. Now made in:
29x36 in., 36x44 in., 46x55 in., 51x67 in.

Demonstrated in
Huebner Laboratories, 202 E. 44th Street, New York City

BETTER PLATES

♦ High quality in plate coatings expresses itself in a large dependable number of good press impressions—the result of an even and uniform distribution of the sensitizing solution, perfectly dried, caused by the action of gravity during the drying of the plate. A new method of construction and operation, and the arrangement of electric heating units and the ventilating fan, do it!

ALL CLAIMS SUBSTANTIATED

Einson-Freeman Co., Inc., of New York City, nationally known lithographers, recently sent us a copy of a report of Dr. L. R. Meloy, its Technical Director. The report speaks for itself:

"We have found that the new vertical whirler coats plates of both coarse and fine grain perfectly using either the heavy or light coating solutions. This whirler requires less solution than required on the horizontal whirler and in cases where we have had to coat kinked or uneven plates the coating has been satisfactory, while on the old whirler we could not have coated this type of plate. The new whirler also dries the coated plate much faster than the older type, resulting in a saving of time in addition to savings of coating solution and floor space."

Lanston Monotype Machine Co.

Monotype Building ♦ Twenty-fourth at Locust Street ♦ Philadelphia, Pa.

This advertisement is composed in Monotype Hess Neobold, No. 363; Stymie Light, No. 190; Stymie Medium, No. 290, and Rockwell Antique, No. 189

WHY
WE STICK TO IMPERIAL

Less Machine and Metal Trouble

OUR auditor has proved to me that it pays to stick to Imperial. When he showed me his figures on the overhead in my department we found that after we had used Imperial for a year our metal costs due to machine troubles were reduced to a minimum. That's one thing that certainly made a hit with me on Imperial, but of course, in addition to that I like the absolute uniformity, the better looking sheet, the free metal analysis, less fuel consumption afforded by using Imperial Metal.

Another thing that I always did believe, and that was if you buy from the leader in any field you are getting the best. These are just a few of the reasons why we stick to Imperial Type Metal.

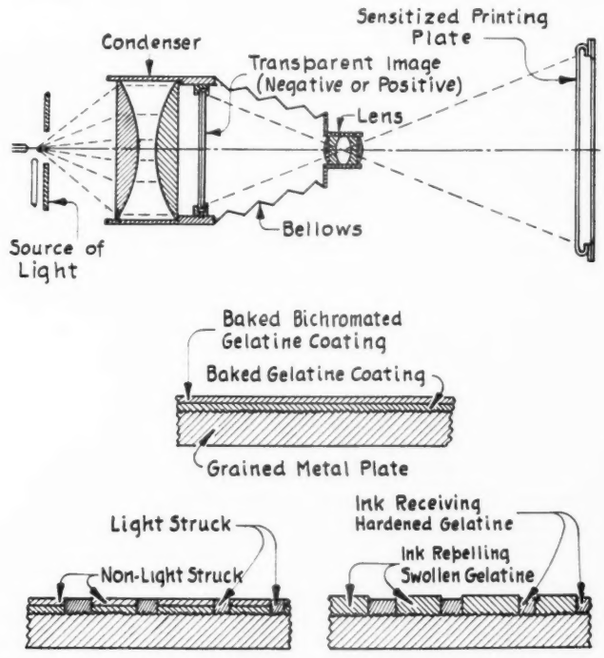
Imperial METAL

THE IMPERIAL TYPE METAL CO.
Philadelphia · New York · Chicago · Los Angeles

The first attempt towards projection for the production of a Collotype printing surface was carried out in 1930, the subject having been a railroad display depicting Mt. St. Clements, situated on the Northern Pacific Railroad. The negatives for this assignment had previously (early in 1930) been employed for producing the same work by projection on bichromated albumin in the Postergraph manner.

Sullivan's assertion naturally aroused the usual degree of incredulous opposition, but his faith in the reticulative property of bichromated gelatin for pictorial representation, brooked all derisive remonstrances, and the actual projection was carried out by Walton W. Sullivan.

The first art reproduction commercially produced was a subject entitled "The Girl with the Story Book," an English painting purchased from a London art dealer for $10,000,



Projection Unit Used in conjunction with Frank O. Sullivan's patent. The application for this patent was filed September 4, 1930, and was issued January 16, 1934

and reproduced for C. A. Crane, an art publisher of Cleveland, Ohio. The work in question was executed in six colors, format 23 by 28 in., in August, 1930.

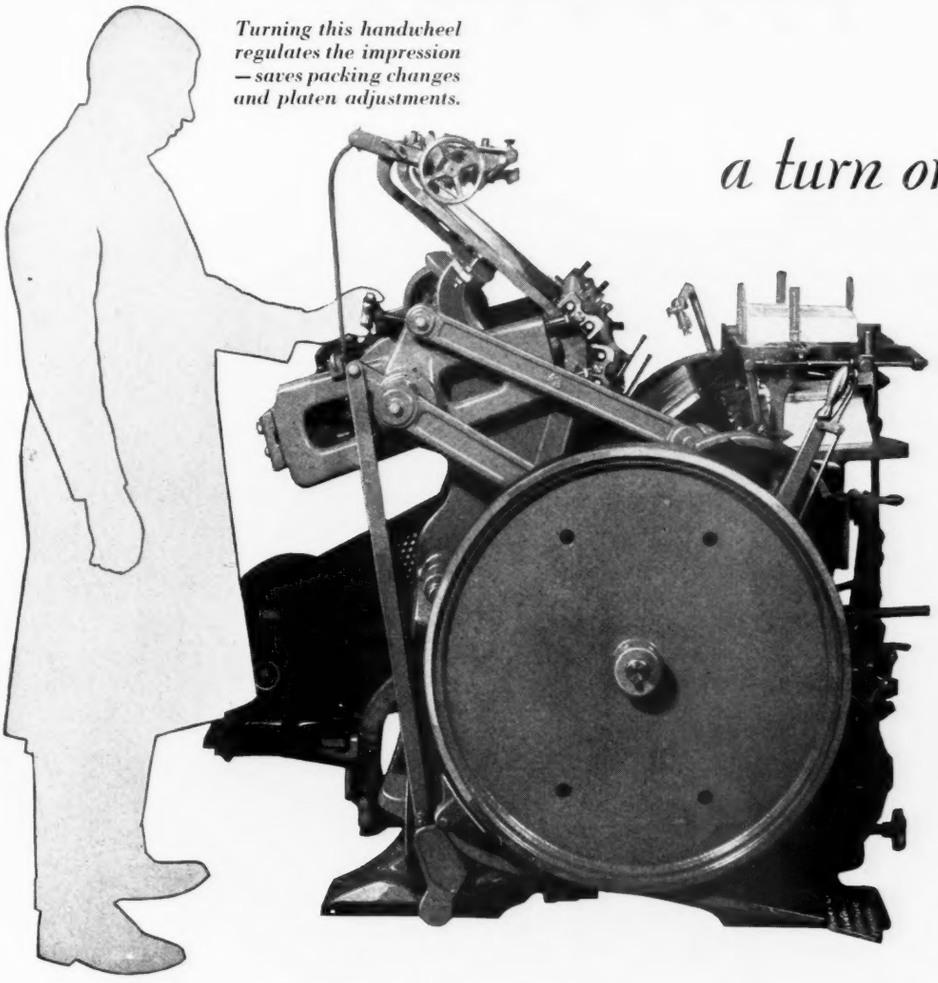
In both previously mentioned assignments, the correction of the continuous tone color records was effected by J. A. Fleischmann, and these continuous tone negatives then projected on the gelatin-sensitized aluminum plate by W. W. Sullivan.

Impressed with the general results obtained and their efficient manner of production under practical conditions, Frank O. Sullivan applied for United States patent, with said application (Ser. No. 479,724) filed September 4, 1930. In addition to the Sullivan signature, the patent application bears the signatures of J. A. Fleischmann and Walton W. Sullivan, individuals instrumental in the projection and correction of the negatives, for the creation of the work mentioned in the previous paragraph.

Merely to allay confusion in the minds of the readers, it must be said that aside from the employment of projection, Sullivan's method has nothing in common with the older process of Postergraph.

In this older method, projection was carried out on zinc plates sensitized with bichromated albumin. The negatives for projection were either made in halftone of mezzograph (8 by 10 in.), or, if these negatives were of the continuous

A few turns of
THIS HANDWHEEL * * *



Turning this handwheel regulates the impression — saves packing changes and platen adjustments.

Sometimes a turn or two of
THIS ONE

This handwheel keeps form and platen in exact alignment; used only when going from light to heavy stock or vice versa.

That's Handwheel Impression Control . . . .

as built into the New Craftsman Press with Rice Automatic Feeder. It gives you:

Better Presswork: With these handwheels it is always easy to keep form and platen in exact alignment, preventing slurs and uneven printing that come from inaccurate impression.

Faster Makeready: With correct impression simply a matter of turning a handwheel, much time wasted in packing changes and platen adjustments is eliminated.

Lower Costs: With makeready time cut down, a bigger share of each day's press time goes into actual production of saleable printed impressions.

Write us, without obligation, for "the proof of the pudding" . . . an extremely interesting printed demonstration showing exactly what results are possible and how easily you can obtain them when you use Handwheel Impression Control . . . just one of the many outstanding features of the New Craftsman Press with Rice Automatic Feeder.

THE CHANDLER & PRICE COMPANY • CLEVELAND • OHIO

Printing Presses and Paper Cutters

Branch Offices and Display Rooms:

NEW YORK: Grand Central Palace, 480 Lexington Avenue • CHICAGO: Transportation Building, 608 South Dearborn Street

tone variety, a large halftone or mezzograph screen was placed before the sensitive plate during projection.

It is evident that in either method, a mechanically produced grain or dot projection was the true printing surface; if the negatives were halftone or mezzograph, the final press plate images obviously were great enlargements of the mechanical structure (not grain formation) present in the negatives.

In contradiction to Postergraph, the photogelatin method of Sullivan was a radical departure and improvement, since it did not rely on the interposition of either screen or screened negative for the translation of detail.

Sullivan's method is based on the reticulative property possessed by bichromated gelatin on exposure to light. It requires no screen, and the resulting images are really photographic images in continuous tone in greasy ink—true Collotype—produced on a quantity basis in any size up to 32 by 60 in.

It might be well at this point to give credit to a Cleveland concern, the Continental Lithograph Corporation, for quick realization of the advantages of projectional photogelatin. Also the confidence and fortitude shown by this establishment in its initial installation of the process. At present, the Continental Lithograph Corporation possesses the distinction of being the only plant in America capable of executing Collotype illustrations through the projection method.

We have recently had the good fortune of viewing an exhibition of the results secured from Sullivan's methods. It is little short of astounding regarding the future possibilities of this method for the reproduction of the highest grade of single and multi-color work.

A point of particular interest to the lithographer was the beautiful effect obtained by four-color methods—results far surpassing photoengraving and offset lithography.

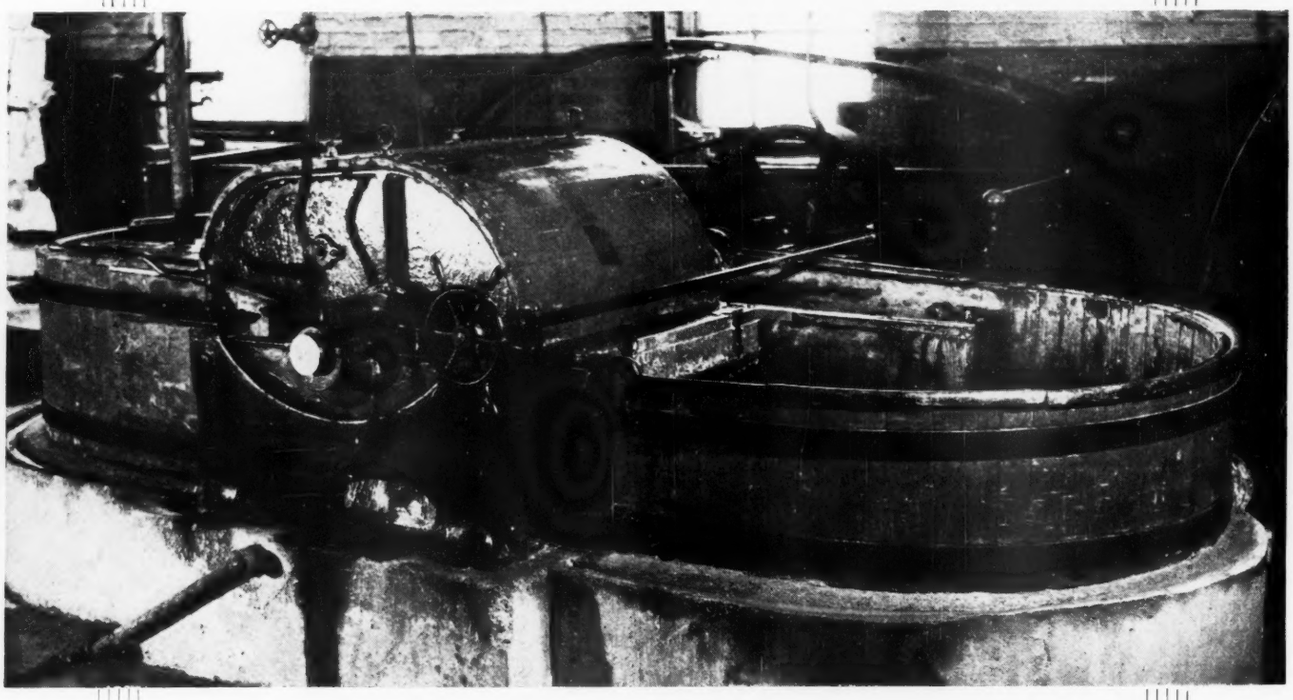
The process is admirably suited for the reproduction of paintings, high-class displays, inserts and other illustrative designs, where true photographic quality is the chief aim. Collotype illustrations of this type are a revelation, and at a glance are often mistaken for photographs.

After all, no one gainsays the fact that the halftone screen at best is a faulty medium for tonal interpretation.

If the elimination of the screen is affected, have we not reached the highest stage of development, possible at the present time?

Surely the Collotype image has never been surpassed, and with its present application to commercial subjects, a new vista of beauty is already dawning on the Graphic Arts.

The Picture Story of "Wood Dry Mats in the Making" No. 3



A miniature beater for experimental work

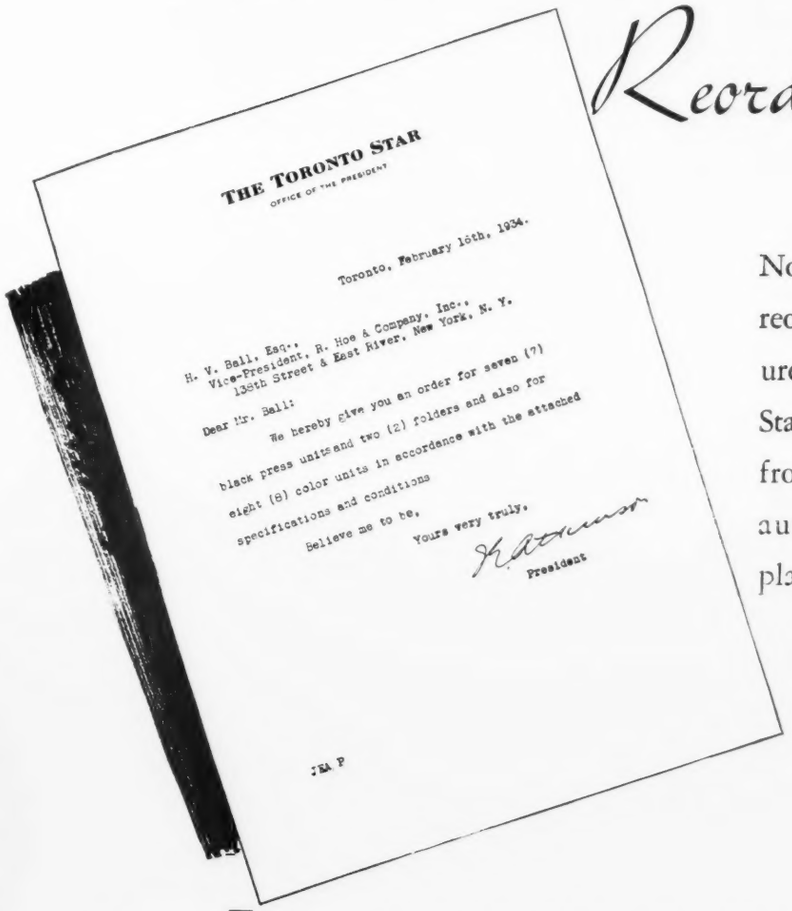
EXPERIMENTAL equipment plays a big role in our continuing effort to improve Wood Dry Mats, which will in turn facilitate newspaper production. The 100-pound experimental beater pictured above is an important factor in such work. Perhaps it may be an increase or a decrease in the beater furnish, perhaps some new ingredient is added or some old one omitted—this miniature beater is vitally important in making such tests. If, through such an experimenting process, the trial is considered satisfactory, the next step is to duplicate the run on a commercial scale.

WOOD DRY MATS
ALWAYS UNIFORM

WOOD FLONG CORPORATION
HOOSICK FALLS, NEW YORK

TORONTO STAR...

Reorders from HOE



THE TORONTO STAR
OFFICE OF THE PRESIDENT

Toronto, February 16th, 1934.

H. V. Ball, Esq.,
Vice-President, R. Hoe & Company, Inc.,
138th Street & East River, New York, N. Y.

Dear Mr. Ball:

We hereby give you an order for seven (7) black press units and two (2) folders and also for eight (8) color units in accordance with the attached specifications and conditions

Believe me to be,

Yours very truly,

President

No testimonial is as sincere as a reorder. That is why we take pleasure in announcing that the Toronto Star, after many years of service from Hoe printing presses and auxiliary equipment, has just placed an order for:

7 Hoe Super-Production Units of the new Arched-Design.

2 Hoe Super-Production Folders.

8 of the latest Hoe Super-Production Color Units.

IRVING TRUST COMPANY . . . RECEIVER IN EQUITY FOR

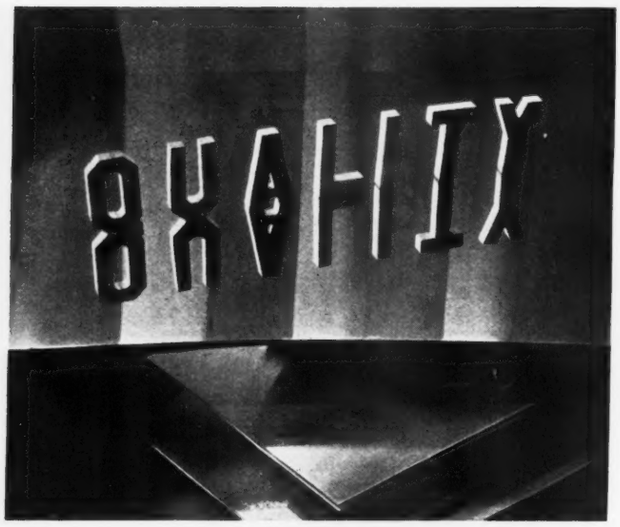
R. HOE & Co., Inc.

. General Offices .

138th St. and East River

. New York City .

BOSTON SAN FRANCISCO CHICAGO



Newspaper Engravers are demanding this Trouble-Free Zinc

QUALITY is bound to be appreciated. That's why exacting photo-engravers in all parts of the country have turned to Zomo Electric Zinc. In less than five years since the electric induction process was perfected, it has become the unqualified choice of the majority of leading newspaper photo-engravers everywhere.

This metal is made according to an exact formula (found to be ideal for photo engravers) developed in the finest zinc laboratory in the world. The electric induction method of manufacture of Zomo Electric Zinc assures automatic control of temperature and complete mixing of ingredients to form the perfect alloy. This method eliminates all possibility of variations in crystal structure or composition.

Zomo Electric Zinc stands up under high matrix pressure, etches quickly and cleanly and routes with gratifying ease. The quality of this metal is in keeping with modern newspaper methods.

The following carry stocks of Zomo Electric Zinc for prompt delivery: Rolled Plate Metal Co., Pacific Steel & Copper Plate Co., C. G. Hussey & Co., Eastman Kodak Stores, Inc., W. E. Booth Co., Ltd., National Steel & Copperplate Co., American Steel & Copperplate Co.

ZOMO ELECTRIC ZINC

. . Patents

(Continued from page 22)

1,942,683. PRINTING BLOCK AND METHOD OF MAKING SAME. Bert C. Chambers, New York, N. Y., assignor to Wallace & Tiernan Products, Inc., Belleville, N. J., a corporation of New Jersey. Application April 21, 1930. Serial No. 445,853. 3 Claims. (Cl. 101 — 395.)

1. The method of preparing a printing block or plate that has a rubber layer strippably secured to an intermediate layer, which is in turn strippably secured on a substantially rigid base, which method comprises cutting through the rubber layer down to the intermediate layer peripherally about the non-printing portions of the rubber layer; stripping off the portions from the intermediate layer so as to leave in relief thereon the printing portions of the rubber layer; and cutting through the exposed intermediate layer peripherally about those portions which it is desirable to remove and stripping off the same.

1,942,964. WEB TENSION CONTROLLING MECHANISM FOR USE WITH ROTARY PRINTING MACHINES. Albert J. Horton, White Plains, N. Y. assignor to R. Hoe & Co., Inc., New York, N. Y., a corporation of New York; Irving Trust Company, receiver. Original application April 5, 1928, Serial No. 267,705, now Patent No. 1,885,262, dated November 1, 1932. Divided and this application July 11, 1929. Serial No. 377,509. 9 Claims. (Cl. 242 — 75.)

1. In a mechanism for feeding a web to a printing machine, a support adapted to hold two web rolls and arranged to move either roll from a loading position to a feeding position, and a web roll controlling mechanism including brakes for restraining the rotation of the rolls, a member movable in response to variation in the tension of the web, and an equalizing connection between the member and the brakes, whereby the pressure on the brakes is increased when the web slackens.

1,942,490. INK DOUBLE-ROLLING CONTROL. Hugh T. Quigley, Philadelphia, Pa. Application September 23, 1932. Serial No. 634,490. 9 Claims. (Cl. 271— 56.)

1. The combination with the suction feeder mechanism and an oscillatory shaft of printing presses of a control-attachment comprising automatically-activated cam and ratchet mechanism to reciprocate the feeder air valve, and means operatively-coordinating the cam and ratchet means to an oscillatory shaft aforesaid with capacity for idling relative thereto when desired, and a rockable coupler whereby the feeder air valve is connected to or disconnected from the control-attachment.

1,943,486. PLANOGRAPHIC PRINTING BASE AND PROCESS OF PREPARING IT. Ulrich Ostwald, Wiesbaden-Biebrich, Germany, assignor to Kalle & Co., Aktiengesellschaft, Wiesbaden-Biebrich, Germany, a corporation of Germany. Application March 10, 1931, Serial No. 521,613, and in Germany March 14, 1930. 11 Claims. (Cl. 95 — 5.4.)

1. In the process of preparing planographic printing bases, the step which consists in using as printing bases sheets of cellulose esters capable of being saponified, producing the desired printing design being resistant to a saponifying agent upon that base and causing a saponifying agent to act upon the places of the printing base which are free from the printing design.

1,943,526. METHOD OF BACKING ELECTROTYPE PLATES. Rush T. Haines, Lansdowne, Pa., assignor to Royal Electrotype Company, Philadelphia, Pa., a corporation of Pennsylvania. Application Nov. 11, 1930. Serial No. 494,917. 8 Claims. (Cl. 101—401.1.)

1. The method of backing a printing plate, which consists in depositing backing metal upon the nonprinting face of the plate, in heating and fluxing the plate, in flowing metal or alloy into union with the nonprinting face of the plate to fill up the hollows of the nonprinting face of the plate and in cutting from the nonprinting face of the plate unti plate is of such thickness that electrodeposited backing metal is exposed over portion of non-printing face.

1,943,645. OFFSET PRINTING METHOD. Walter F. Wallace, Winnetka, and Lowry K. Grulee, Evanston, Ill., assignors to The Wallace Press, Chicago, Ill., a corporation of Illinois. Application May 11, 1932. Serial No. 610,531. 5 Claims. (Cl. 95 — 5.)

1. The method of printing ruled forms which comprises the steps of applying relatively heavy markings to emphasize the position of certain lines upon the copy for photographic reproduction, making a photographic negative from the marked copy, cutting in lines connecting respective markings upon the photographic negative, and using the prepared photographic negative for printing positives therefrom.

1,943,902. PRINTING PRESS. Ernest James Smith, Fleet Street, England, assignor to The Goss Printing Press Company, Chicago, Ill., a corporation of Illinois. Application March 11, 1932. Serial No. 598,133. 11 Claims. (Cl. 101 — 378.)

1. A lock-up device for plate cylinders including in combination three spaced clips to clamp an inner and outer plate on the cylinder, means for simultaneously releasing both plates and means for clamping a plate between outer pair of clips in absence of inner plate.

1,944,014. SPACEBAND CLEANER. Howard B. Mooney, Pittsburgh, Pa., assignor to Paul C. Dunlevy, Pittsburgh, Pa. Application June 5, 1931, Serial No. 542,258. Renewed March 21, 1933. 13 Claims. (Cl. 15 — 102.)

7. A spaceband-cleaning machine including the combination of a revoluble buffer, a spring-backed sliding head extending on a line perpendicular to the lateral face of the buffer, means cooperating with the sliding head for supporting a spaceband in a stationary position opposite the buffer, and actuating means for the reciprocation of the sliding head on the perpendicular line, to move the spaceband from its stationary position into engagement with the buffer.

1,945,621. MEANS FOR CARRYING REELS OF PAPER IN PRINTING AND OTHER MACHINES. John Shaw, Leeds, England. Application June 11, 1932. Serial No. 616,693 and in Great Britain July 31, 1931. 3 Claims. (Cl. 242—72.)

1. Means for carrying reels of paper in printing and other machines, comprising a frame a supporting spindle rotatably mounted in the frame and having a cylindrical extremity for insertion within the bore of the reel, a plurality of seatings formed in the cylindrica extremity, a plurality of reel gripping dogs mounted to be radially and slidably movable in the seatings and provided at the inner ends with surfaces inclined to the axis of the spindle, a cylindrical bore in the cylindrical extremity, and a cylindrical dog-adjusting element slidably fitted within the bore and formed with inclined surfaces for engaging the corresponding surfaces provided upon the radially movable dogs for adjusting the dogs into engagement with the bore of the reel to be supported.

1,945,625. TYPE RETAINING DEVICE FOR PRINTING MACHINES. Erwin H Aldinger and Walter E. Friedrichs, Philadelphia, Pa. Application September 7, 1932. Serial No. 631,962. 5 Claims. (Cl. 101—377.)

1. As a new article of manufacture, a retaining device for detachably securing an electrotype plate to the T-grooved surface of the type drum or plate of a printing machine, formed from spring strip metal with a pendant L-shaped projection at one end to engage in a groove of the type drum or plate, an open top pendant loop tongue at the opposite end to engage in another groove in the type drum or plate, and a connecting portion above the surface of the drum or plate to engage a corner of the electrotype plate.

1,945,631. PRINTING PRESS. Harland Fankboner, Chicago, Ill., assignor to The Goss Printing Press Company, Chicago, Ill. a corporation of Illinois. Application March 10 1932. Serial No. 597,976. 14 Claims. (Cl. 101—350.)

1. An inking mechanism for printing presses including in combination an ink drum, a fountain roller, a transfer roller between the drum and roller, the transfer roller comprising a plurality of members having segmental ink receiving surfaces relatively movable to each other.

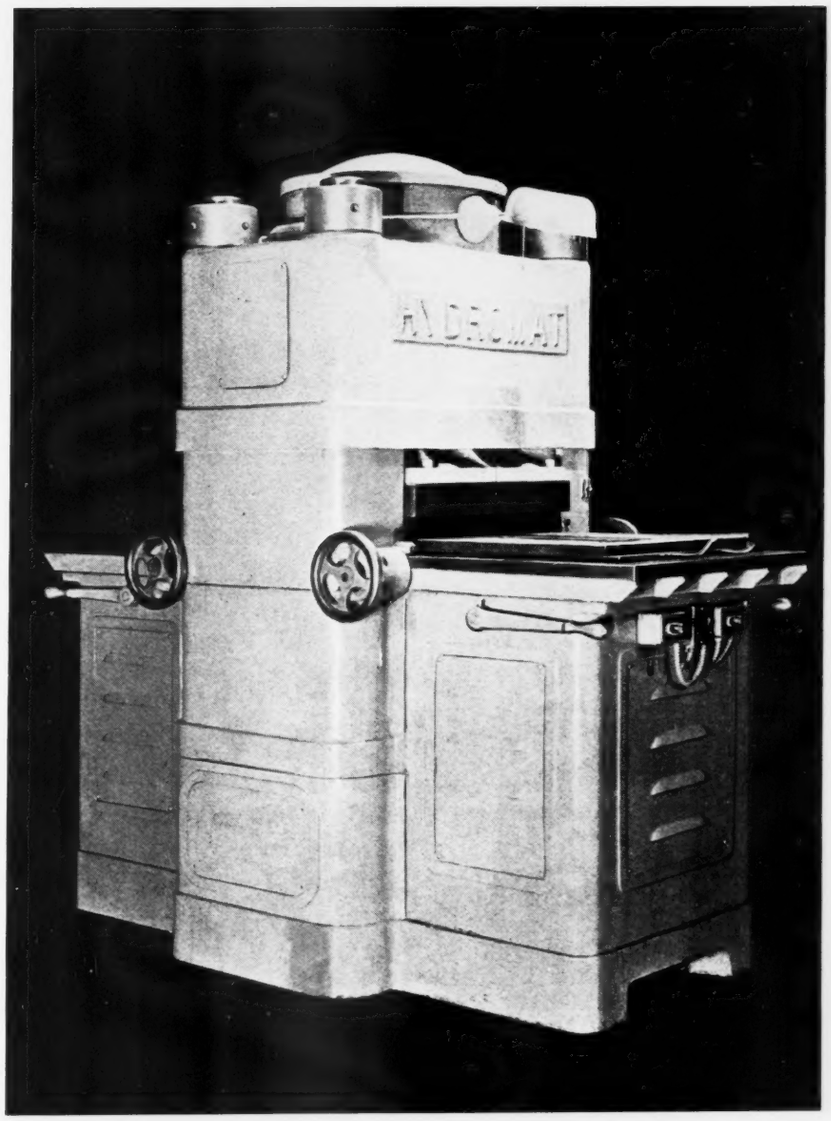
1,945,671. PLATE-LOCKING MECHANISM. Henry A. Wise Wood, New York, N. Y., assignor to Wood Newspaper Machinery Corporation, New York, N. Y., a corporation of Virginia. Application March 22, 1932. Serial No. 600,444. 7 Claims. (Cl. 101—378.)

1. In a plate clamping device, the combination with means for moving a plate longitudi-

Continued on page 36

THE HYDROMAT

Direct Pressure Molding Press



Technical Data

★ PRESSURE — 500 tons are exerted through 18-inch diameter ram, suspended in the head.

★ PUMP — Creates 250 pounds per square inch pressure for the fast down movement and up to 4,000 pounds per square inch for the pressing operation. Driven by a 10 h.p. motor.

★ STROKE — Maximum platen movement is 1½-inch.

★ OIL — Oil reservoir contains 12 gallons of hydraulic oil.

★ PACKING — Non-metallic stationary packing, easy removable and good for three to five years of service.

★ HEATER — Westinghouse heating elements in lower platen of 3,000 watts maintained automatically by temperatures from 100° to 450° fahrenheit.

★ WEIGHT — Press complete approximately 6 tons.

★ FLOOR SPACE — 36 by 76 inches.

The Hydromat Direct Pressure Press is the last word in direct pressure equipment for syndicate work, newspaper color printing and Sunday newspaper magazine work. Whether for commercial work or syndicate work the Hydromat gives results, up to 175 screen, not now obtainable in any other type of direct pressure equipment or mat rollers. This type of machine is now standard in European countries and is becoming so in Canada.

Mechanically this machine is an engineering marvel. Its new patented stroke limitation works on an entirely new principle resulting in an absolute parallel and even pressure under all conditions. The platen cannot possibly tilt. It adjusts to 100/1000ths of an inch under full 500 ton pressure. Upper platen is adjustable to varying conditions. The upper platen moves down instead of the lower, up, which permits use of heat.

In color printing it is not necessary to adjust the pressure to the size of the actual printing surface of the color, instead the same pressure and the same cushion can be used on each color and at the same time you will get identical depths on the mat. This saves time and adjusting pressure and eliminates the danger of smashing types and cuts.

The low price of this machine will be a revelation. Investigate the Hydromat now. Write for complete information.

ELECTRO-HYDRAULIC MACHINERY CO.

1025 SWEITZER AVENUE » AKRON, OHIO

50% SAVING IN PRICE

Without Sacrifice of

QUALITY PRINTING

With

Kork-O-Tan

REG. U. S. PAT. OFF.

BOTTOM PRESS BLANKETS

●

NON-STRETCH—Kork-O-Tans butt together perfectly and do not narrow up and pull away at the center.

TOUGH—A combination of strong Manila Hemp (Musa Textilis) and clean ground cork backed up by a high tensile and tear strength fabric. Prevents cracking at the slot or pulling off the pins.

EVEN GAUGE—RESILIENT
Makes a perfect base for your top dressing and results in even impression.

LONG LIFE—LOW FIRST COST
Result in a real saving.

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SATISFACTION GUARANTEED
or **MONEY REFUNDED**

BEHR-MANNING • TROY, N. Y.
Established 1872
CORK FIBRE PRODUCTS DIVISION

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Please send details on

Kork-O-Tan BOTTOM PRESS BLANKETS

Paper.....

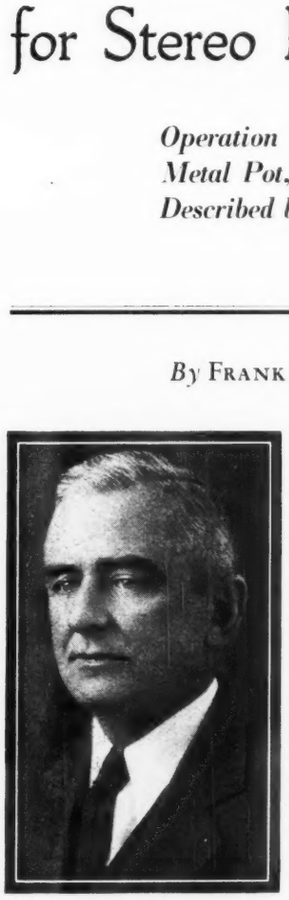
City .....

Att. of .....Position.....

Immersion Heating for Stereo Pot

Operation of Installation in 30-in. Metal Pot, Lock Haven (Pa.) Express Described by Publisher F. D. O'Reilly

By FRANK D. O'REILLY*



Frank D. O'Reilly Gives Some Data on Gas Consumption in Plant of Lock Haven (Pa.) Express.

WHEN we installed our new Duplex press and stereotype equipment in 1932 the question of heat for the stereotype pot was given some consideration.

The advantages of immersion heat, listed in the order of their importance to us, are:

1. Automatic regulation of temperature.
2. Comfortable surroundings due to elimination of external combustion chambers.
3. Freedom from fear of pot failure.
4. Short melting-down time.

After operating with these advantages it is not conceivable to go back to the use of any fuel burned underneath the pot.

In April of 1933, we learned of the gas immersion heating installation which the Kemp Company made at the York, Pa., *Gazette* and *Daily*, and decided that it was worth looking into.

The proposition that the Kemp Company made to us guaranteed that our gas bill would not exceed a given amount and, as a consequence, we installed gas immersion heating equipment in our 30-in. diam. pot early in July of last year.

The immersion heating equipment was installed in our stereotype pot as shown in the accompanying illustration. It operates with a complete air-gas mixture supplied under pressure from an industrial carburetor. The latter unit which functions automatically, premixes air and gas which is delivered to the heating element under a positive pressure created by a turbo-compressor driven by a ¼-h.p. motor.

*Publisher, Lock Haven *Express*, Lock Haven, Pa.

A single burner located in the heating element supplies all the heat. An automatic temperature control is used with the gas installation to obtain proper temperature control. The exterior of the pot is surrounded by a bed of insulation.

Because of the capacity of the heating element, our melting down time is about one hour, a feature which is of some little value to us.

Through the use of the products of combustion to blanket the surface of the metal, dross formation shows a noticeable reduction.

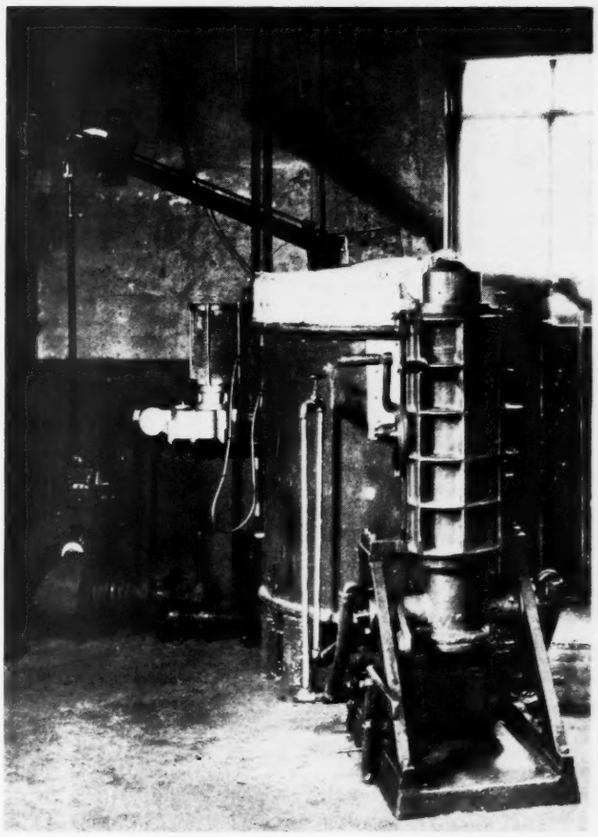
Our gas rate, based upon a coal gas containing 530 B.t.u. to the cu. ft., averages $1.25 per 1000 for the stereotype pot. Actually, we purchase some gas at a rate higher than this, but inasmuch as this gas was purchased previous to the installation of the stereotype equipment it can be disregarded in these computations.

Over a period of many days we have found our average daily gas consumption as recorded by the separate meter for the stereotype pot to be 545 cu. ft., giving an average total for the 26 days we operate per month of 14,170 cu. ft., costing us, at $1.25 per 1000 for first 10,000 cu. ft. and $1.00 per 1000 for the remainder—$16.67.

The annual saving returns to us in excess of 40% on our investment. It is interesting to note that the Kemp Company guaranteed that our gas bill would not exceed $18.40.

In One Plant 55 Years

Frank P. (Cap) Hill, 74, a printer who worked for the Quincy (Mass.) *Patriot-Ledger* for 55 years, died February 14 at Quincy City hospital following an emergency operation for appendicitis. For many years he was foreman of the composing room. Of recent years, owing to his failing eyesight, he worked at a line-casting machine, setting heads and large-letter ads.



View of 3000-lb. Duplex stereotype metal pot equipped with immersion heating elements in the plant of the Lock Haven (Pa.) Express.

EDES PHOTO-ENGRAVING

EDES SUPERFINE QUALITY ZINC

ZINC

THE STANDARD FOR MORE THAN 80 YEARS

THE EDES MANUFACTURING CO., PLYMOUTH, MASS.

ETCHES CLEAN AND QUICK

Sales Representatives

John H. Heimbuecher Metals Co., 514 No. Third St., St. Louis, Mo.
Gazzolo Drug & Chemical Co., 119 So. Green St., Chicago, Ill.
E. H. Walker Supply Co., Printcraft Bldg., Washington, D. C.
R. Mohr & Sons, 883 Mission St., San Francisco, Cal.
Thompson-Hayward Chemical Co., 2228 Blake St., Denver, Colo.
Thompson-Hayward Chemical Co., 909-2nd St. So., Minneapolis, Minn.
Metzger Photo Supply Co., 1091 So. Main St., Akron, Ohio
G. C. Dom Supply Co., 125 East Pearl St., Cincinnati, Ohio

Why do they write—

"Please send us two more Model 'B' Form-O-Scorch machines like the one we have."
—*The Montreal Star.*

●

"Rush at once another scorcher like our Model 'A'."
—*Newark Evening News.*

●

"Duplicate our last order for a Model 'A' Form-O-Scorch."
—*Newark Star Eagle.*

●

"Kindly enter our order for two Model 'B' Form-O-Scorch machines."
—*La Presse, Montreal.*

●

"How soon can you ship us two of your Form-O-Scorch machines?"
—*Times-Picayune, New Orleans, La.*

●

"Please ship two Model 'A' Form-O-Scorch machines."
—*Auburn Citizen-Advertiser.*

●

Because the Form-O-Scorch machine is the most efficient scorcher ever offered to the trade—and it is offered at an unusually low price!

●

AMERICAN PUBLISHERS SUPPLY

P. O. Box 131 West Lynn, Mass.

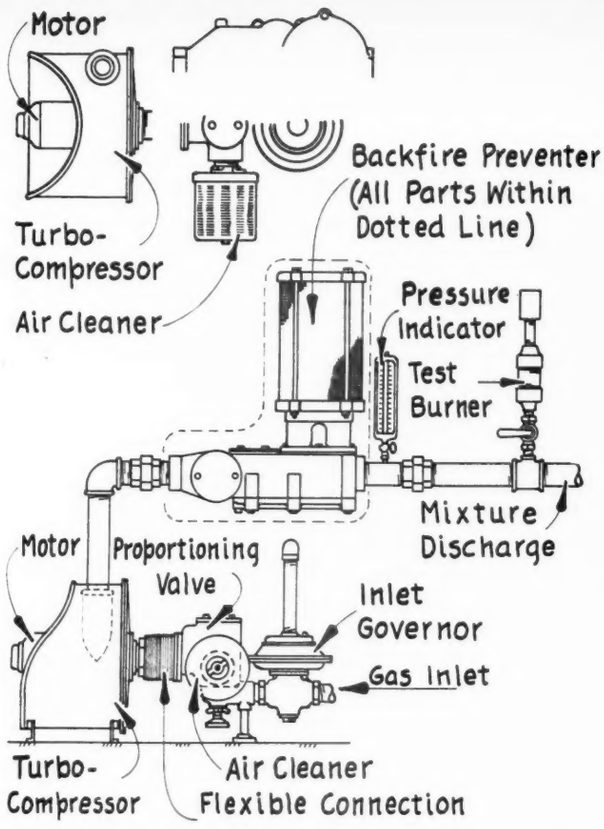


Diagram showing the component parts of the Series T Industrial Carburetor which is used in connection with the Kemp Immersion Burner Stereotype Metal Melting equipment. As is shown in this diagram, gas from the gas company's meter flows through pipe and valve to the inlet governor. This governor is set to discharge at zero pressure; therefore, regardless of pressure variation of the incoming gas, gas will always be delivered to the porportioning valve at atmospheric pressure. Air from the room atmosphere is drawn through the air filter by the suction of the turbo-compressor. The air and gas proportioned by the setting of the mixture adjustment screw enters the turbo-compressor, is thoroughly mixed and bosted to a positive pressure adequate for combustion purposes.

The outlet of the turbo-compressor delivers directly into the new style backfire preventer. It is installed inside the building, and all outside piping is eliminated. After it passes through the backfire preventer, the gas-air mixture ready for combustion leads direct to fire check and burner equipment. The ratio of gas to air can be changed at will by adjusting the micrometer hand wheel in the proportioning valve above.

Fifth Conference, Printing Industries Division

The fifth conference of the Technical Experts in the Printing Industry, Printing Industries Division, A. S. M. E., will be held in Philadelphia, in October.

A blank has been mailed by the Division in which space is provided to make suggestions for suitable topics to be discussed at the October Conference. Suggestions should be mailed to Edward Epstean, Chairman Program Committee, A. S. M. E., Printing Industries Division, 29 West 39th St., New York, N. Y.

Proceedings of the fourth conference held in Chicago last June will be available for distribution soon. The edition will be limited and for that reason reservation orders should be mailed promptly to E. M. Murrayes, Publication-Sales Dept., A. S. M. E., 29 West 39th St., New York, N. Y. Single copies are 75c each; 10 copies, $7; 25 copies, $16; 50 copies, $30; 75 copies, $42; 100 copies, $54.

. . Makeready

(Continued from page 10)

There is illegitimate makeready which is error of dimension and which can be prevented by systematic inspection.

There is pre-makeready which is some form of advance plate treatment.

But let us take up each one of the items in an orderly way and see what can be done about them.

CONTROL OF ERRORS IN TYPE

1. *Controlling Errors in Type.*—The best detective is a precision test press. With assured accuracy of impression and with hard packing, a test proof shows clearly the high letters and the low letters. The type form must, of course, be placed directly on the bed of the press. No galley is sufficiently accurate for this purpose.

High and low letters are then picked out and measured on a type gauge. Errors of plus 0.001 in. and minus 0.001 in. will show clearly but may safely be ignored under average conditions. Type with errors of plus 0.002 in. to 0.005 in. and errors of minus 0.002 in. to 0.005 in. will be found frequently and should be cast into the hell box. Worn and damaged letters can be culled at the same time.

Monotype in many plants shows errors of 0.002 in. to 0.005 in. (generally over type-high) according to the condition of the mats. It is to be inspected in the same manner, by test press and type gauge. The obvious necessity is to correct or to replace the mats, through the manufacturer.

Line-slugs also have some high and low letters which should be checked out, but the important thing about commercially produced line-slugs is the variation from type-high and the production of slugs which are thicker at the top than at the bottom.

Under average conditions in some shops there is some variation in the height of slugs. With skilled mechanical service, it is possible to obtain more accurately trimmed slugs. Certainly, there is a vast amount of line-set composition with errors of 0.003 in. to 0.005 in. both over and under type-high, which can and should be corrected. Inevitably these errors cause makeready whether plated or printed direct. Slugs which are thicker at the top than at the bottom cause trouble and delay in lock-up, justification, plating and work-ups.

Frequent inspection by slug height and body thickness gauges, close attention to adjustments, and thorough general care of machines will reduce the extremes of this error.

Note that all of the foregoing errors unless corrected are repeated over and over again to pile up costs, whereas if corrected at the source they are eliminated for good. The cost of doing the job right once, and in proper place, is but a fraction of the cost of doing it over and over again at the press, stone or finishing bench. The measures are simple. The equipment is inexpensive.

ERRORS IN HEIGHT OF RULE

2. *Controlling Errors in Rule.*—Hairline rule should be about 0.915 in., one point rule should be about 0.916 in., two point rule should be about 0.917 in. The heavier sizes can be type-high, 0.918 in. This peculiarity of fine rule punching has long been observed by the trouble it causes in electrotyping and in makeready.

Type-high is the datum line running through this whole matter, but this is one of several instances when best results follow a departure from type-high. Compression of packing explains it.

Test press proofs of rule show this phenomenon conclusively. A type gauge checks it. The only remedy is at the source. Shave down brass rule and correct the molds in machine-cast rule.

ERRORS IN ELECTRO PLATES

3. *Controlling Errors in Electrotype Plates.*—There are three kinds of errors commonly found in greater or less degree in patent plates, viz., errors in thickness, errors in surface levelness and the errors of impression due to color density.

(a) Errors in thickness due to inaccurate shaving. Plates may have been ordered 0.152 in. (which is 11 points) and are delivered 0.149 in. or 0.155 in. Or they may vary within themselves and be 0.002 in. to 0.005 in. thinner along one side, or end, or corner. All such variations are reflected on the press and cause makeready.

There are two ways of correcting these thickness errors. The simplest is by plate gauge and proper underlay. The plates are measured under printing pressure and the correct amount of underlay to level is glued to the back. This is exactly what the pressman does at the press, only it is done more accurately this way and does not use the more valuable time of the press. An experienced man on the plate gauge can even vary the height of plates according to surface character, thus anticipating press conditions.

The other way is by precision test press proof. The plates are underlaid until they proof an even impression. This is the more exact method.

(b) Errors in surface levelness such as sinks and high edges, the products of molding and imperfect finishing in the foundry.

These errors of uneven surface are revealed by a test proof on a precision test press. To a very large and certainly worthwhile extent, they can be

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We Investigated Other Systems Before Installing LUDLOW

WE ARE SURE of every statement we make regarding the many advantages we receive from the Ludlow and Elrod in our composing room, because we made a thorough investigation of other systems for display composition before installing the Ludlow.

We first installed the Ludlow System about fourteen years ago and, with the addition of new faces from time to time, it has been possible to give our advertisers sales-producing typography and new type lines in their ads, every day of the year, at a very low composing room cost.

We have just confirmed our original judgment by trading in our Ludlow for the up-to-date machine with all the new improvements.

Recently we purchased a new electric Elrod which furnishes our composing room with an abundance of strip material of mighty satisfactory quality. At "30" we are ready to go.

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Mechanical Superintendent
PEORIA STAR

LUDLOW TYPOGRAPH COMPANY
2032 Clybourn Avenue, Chicago, Ill.

Set in Ludlow Ultra-Modern, Ultra-Modern Bold and Nicolas Jenson. Elrod rules.

corrected by paper underlay, since the test press offers a standardized impression. Obviously it is impossible to handle detail this way.

(c) Errors of impression due to the general character of the plate and the variable squeeze required as between solids, high lights, vignettes.

A small light halftone prints better a little below type-high and a large heavy halftone prints better a little above type-high. A line zinc of open character must be well under height to prevent punching. These adjustments in height are quickly and conclusively made by underlay on a test press.

The impressional variants between solids and highlights has been the subject of much argument but the weight of experience compels us to recognize the necessity for more squeeze on the solids and less on the highlights. Mark-out underlay to relieve the high lights and support the solids, when done on a precision press, goes a long way in saving press makeready. The effect is to stiffen the solids to stand up to the load of the cylinder and at the same time take some load from the highlights. Again, detail is obviously impossible.

It has taken many words to explain just what happens in pre-makeready on a precision test press. In practice they merge into one very simple operation familiar to all pressmen, viz, level the plate and adjust the impression. Ordinary proof presses will not function for these purposes. They are neither strong enough nor accurate enough. Only a precision press with bearer contact under load is capable of these pre-makeready operations.

Continued next month.

. . Patents

(Continued from page 30)

nally on a plate cylinder up to clamping position at its circular ends, of means whereby the motion of plate into clamping position will clamp down its straight edge against cylinder.

1,945,676. PROCESS OF PRODUCING PRINTING SURFACES. Herman C. Boedicker, New York, N. Y., assignor to Photo-cylinder Corporation, a corporation of New York. Application May 5, 1932. Serial No. 609,354. 9 Claims. (Cl. 95—5.7.)

7. In the process of producing printing surfaces, making a photographic negative of the design to be printed, making a silver print from such negative, outlining the design on the print in water-proof ink, bleaching-out the silver print to produce a key drawing in ink of the design in outline, making a photographic negative of the key drawing, making a contact photographic positive from the last named negative, blocking-out certain portions of the positive, subjecting a photographic sensitive plate to an exposure of the photographic negative of the key drawing, subjecting the sensitized plate to a second exposure of the blocked-out positive held in registered relation to the exposed plate, while interposing a screen between the sensitized exposed plate and the blocked-out positive, whereby an image of the screen will be imposed on those portions of the sensitized plate corresponding to the unblocked portions of the positive, producing from the developed double-exposed plate a negative printing plate with the design repeated thereon to form a composite negative printing plate, reproducing the composite design on a metal printing roller in negative, and etching the roller to form a negative intaglio printing surface of the composite design.

1,945,756. PAPER FOLDING MACHINE. Stewart L. Sharpless, Sidney, Ohio. Application August 23, 1932. Serial No. 630,115. 16 Claims. (Cl. 270—62.)

1. In a paper folding machine designed for operation with a multiple speed feeder and combining buckle and knife folding mechanisms, a primary constant speed drive shaft connected with the buckle folding mechanism and operating the same at a constant uniform speed, a second variable speed shaft connected with the knife folding mechanism, and means connecting the shafts for driving the knife folding mechanism at a plurality of speeds in timed relation to the multiple speed feeder, while the buckle folding mechanism is maintained at a constant speed.

1,945,024. INKING ROLLER. Frederick Lamatsch, Grantwood, N. J., assignor to R. Hoe & Co., Inc., New York, N. Y., a corporation of New York; Irving Trust Company, receivers. Application June 18, 1931. Serial No. 545,330. 3 Claims. (Cl. 308—190.)

1. In an inking roller, a supporting shaft, anti-friction bearing races in spaced relation on the shaft, a cylinder enclosing the shaft, a head for each end of the cylinder, each head having an annular recess in its outer end disposed outwardly beyond the ends of the cylinder, a cap for each head, an annular projection on each cap engaged in the recess of its adjacent head, seats in the caps for the bearing races, the races disposed between the heads and caps, and means for detachably securing the caps to the heads.

1,946,091. SAFETY ATTACHMENT FOR TYPESETTING MACHINES. Denis P. McLaughlin, San Diego, Calif. Application March 4, 1931. Serial No. 519,941. 3 Claims. (Cl. 199—52.)

1. In a safety attachment for typesetting machines, the combination with a typesetting machine having a mold disk drive pinion and ejector blades selected by an ejector blade lever, of a casing member supported from the framework of the typesetting machine, and extending outwardly therefrom below the mold disk drive pinion, a lever means journaled within the casing member having an arm extending upwardly into engagement with the pinion, a bracket supporting the ejector blade lever, a catch latch supported by the ejector blade lever and normally holding the movement thereof, the catch latch being capable of limited movement relative to the ejector blade lever so as to release the same and thereupon shift with the ejector blade lever, a flexible casing secured to and communicating with the casing member and secured at its other end to the bracket, a flexible link means threaded through the flexible casing and operatively connecting the lever means with the catch latch whereby movement of the lever means causes the catch laten to release and shift the ejector blade lever so as to select the predetermined number of ejector blades.

1,946,369. TYPOGRAPHICAL MACHINE. Ransom H. Turner, Auburndale, N. Y., assignor to Intertype Corporation, Brooklyn, N. Y., a corporation of New York. Application July 30, 1932. Serial No. 626,947. 12 Claims. (Cl. 199—47.)

1. In a typographical machine, means for casting a type slug of predetermined length and to a predetermined height less than the height of a standard printing plate block, and means for casting raised portions at intervals along the length of the slug to a height equal to the height of a standard printing plate block.

1,946,488. MACHINE FOR MAKING PRINTERS' LEADS AND RULES. George H. M. Dahl, Washington, D. C. Application February 1, 1929. Serial No. 336,832. 35 Claims. (Cl. 199—1.)

1. A macnine for making printers' leads, rules and furniture comprising a melting pot, a closed chamber therein, a demountable mold immediately underneath the pot, a horizontal molding passage in the mold communicating with the closed chamber by way of a port extending directly through the bottom of the pot to a straight-line passage registering at one end with the port and merging at the other end with the horizontal passage and means for forcing the molten metal in a continuous flow from the chamber through the passage.

1,947,390. LINERLESS MOLD. Arthur L. Gagne, San Francisco and Joseph A. Snyder, Mayfield Calif., assignors to Intertype Corporation, Brooklyn, N. Y. Application January 20, 1932. Serial No. 587,772. 5 Claims. (Cl. 199—55.)

1. A linerless mold comprising a lower half, an upper half movable with respect to the lower half, end blocks carried by one half and movable transversely of the other half of the mold for defining the ends of the casting cavity therein, and cam means carried by the lower half for positively raising or lowering the upper half for predetermining the point size of the slug to be cast.

Catalogs, Books and Bulletins

Readers of PRINTING EQUIPMENT ENGINEER who are interested in securing any of the catalogs, books or bulletins listed below can do so by checking the literature desired. Mark carefully only that literature which you wish to receive. Fill out the coupon and send it to us. The literature will be forwarded without cost except where noted.

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Safety and Health in Job and Newspaper Printing Establishments—Well illustrated 12-page bulletin issued by the National Safety Council. Contains much valuable information relative to safe practices and accident prevention.

Bulletin—Illustrating and describing a matrix scorching machine for stereotypers.

Block Leveller—Illustrated bulletin describing new bench machine for leveling cut blocks.

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Harry E. Sloan Passes On

Harry E. Sloan, foreman machinist of *The Evening Bulletin* plant, Philadelphia, where he had been employed 30 years, died February 14 in the Hahnemann Hospital, following an operation. He was 60, and lived in Pitman, N. J.

Mr. Sloan was a widely-known newspaper mechanical expert, and held several patents on linotypes and various other kinds of machinery.

Funeral services were held February 17 at the Pitman residence. The Masonic fraternity participated in the burial services at West Laurel Hill Cemetery. Mr. Sloan was a Past Master of Mt. Moriah Lodge.

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Special Tools and Appliances for Composing Room
Reid Linotype and Intertype Magazine Racks
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A Printing Office Micrometer the Hacker Plate Gauge

used principally for measuring plates, mounted or unmounted, flat or curved—

but also invaluable for measuring paper, board, copper, zinc, bases, blocks, cylinder packing—any material less than 1-⅛" thick and withstanding pressure—

for Hacker Plate Gauges measure under printing pressure which is essential to dependable readings of printing plates.

Check the thickness of plates and cuts you buy and suppliers will give you accuracy. Check the thickness of paper, metal, bases in your plant and stop guesswork. It pays to know.

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Improved
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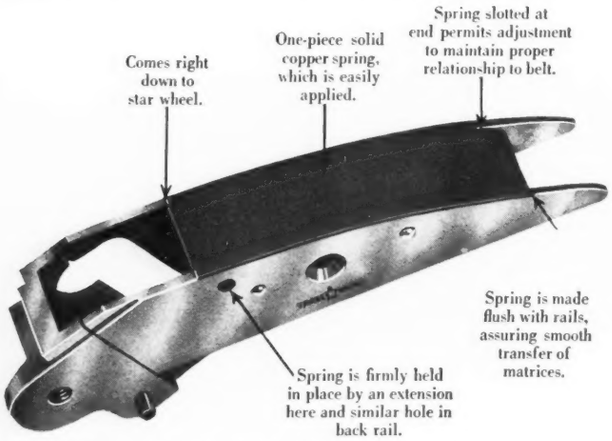
Comes right down to star wheel.
One-piece solid copper spring, which is easily applied.
Spring slotted at end permits adjustment to maintain proper relation-ship to belt.
Spring is made flush with rails, assuring smooth transfer of matrices.
Spring is firmly held in place by an extension here and similar hole in back rail.

THE smooth, flat surface of the adjustable spring extends right down to the star wheel and assures smooth transfer of matrices from the delivery belt. Your old chute block can be used without any change. Easy to apply. You need purchase only the rails and spring. Prices

Complete (with chute block, back and front rails and spring)	$5.95
Assembler Chute Rail, Front	1.40
Assembler Chute Rail, Back	1.40
Assembler Chute Rail Spring	.25

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THE TREND NOW

IS TO

ADVERTISE DIRECT TO THE MECHANICAL EXECUTIVE

Alert Sales and Advertising Managers of manufacturers' products for the printing industry now use *Printing Equipment Engineer* as an advertising medium. They see the advisability of directing their sales messages to the key-production and key-mechanical executives in the larger commercial, private, magazine and daily newspaper plants. Alert — because they know the origin of their sales. Here is the trend evidence.

New 1934 Advertisers in Printing Equipment Engineer

The Chandler & Price Company
Edes Manufacturing Company
Electro-Hydraulic Machinery Co.
R. R. Robertson Company
Timken Roller Bearing Company
Wood Newspaper Machinery Corp.

1933 Advertisers satisfied in the past and using *Printing Equipment Engineer* again in 1934 to reach the purchase-origin of their products.

American Publishers Supply
Behr-Manning Corporation
Burgess Cellulose Company
Certified Dry Mat Corporation
Cline Electric & Mfg. Company
Foley Manufacturing Company
General Electric Company
Goss Printing Press Company
Goodyear Tire & Rubber Co.
Hacker Manufacturing Company
R. Hoe & Company
Imperial Type Metal Company
Intertype Corporation
C. M. Kemp Mfg. Company
Lanston Monotype Machine Co.
Linotype Parts Corporation
Ludlow Typograph Company
Matrix Contrast Corporation
The L. Martin Company
Mergenthaler Linotype Company
Morley Button Mfg. Company
Niles & Nelson, Inc. (B. F. Goodrich Company)
Wm. Reid & Company
Rolled Plate
Russell Products Company
Stahl Newspaper Supply Co.
SKF Industries, Inc.
Tesch Manufacturing Company
Vandercook & Sons, Inc.
Wood Flong Corporation

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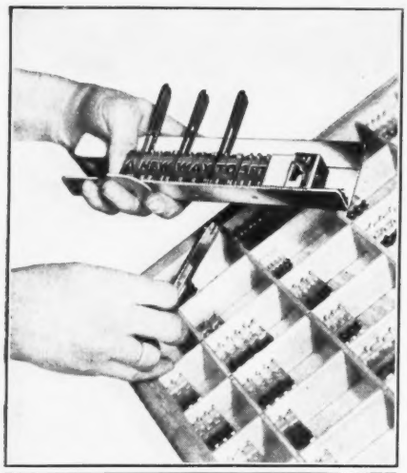
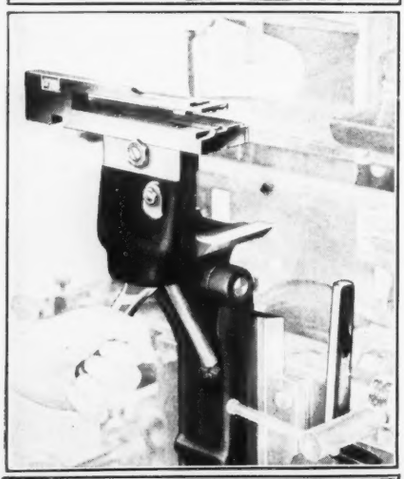
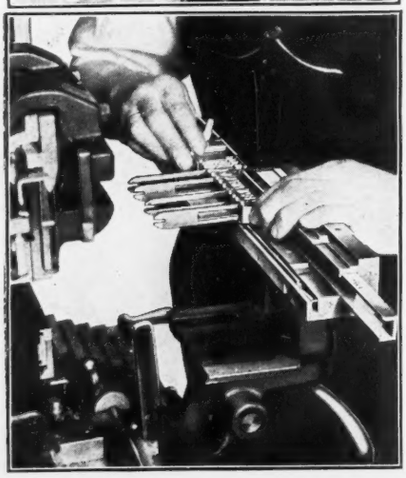
A New and Unique Composing System

U. S. Patent 1740435—Other Patents Pending in U. S. and Foreign Countries







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- It greatly reduces the cost of corrections, making it possible to obtain them at a moment's notice without shifting or replacing magazines.
- It enables composing rooms to adopt all-slug composition up to full-width 60 point caps (which covers 90 per cent of the range of type used in the average plant) without a large investment in special machinery.
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- It permits automatic justification of all lines.
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